



**VHS**

# **VIDEO CASSETTE RECORDER**

MODEL NUMBER 1CVD3020X

## **USER'S MANUAL**



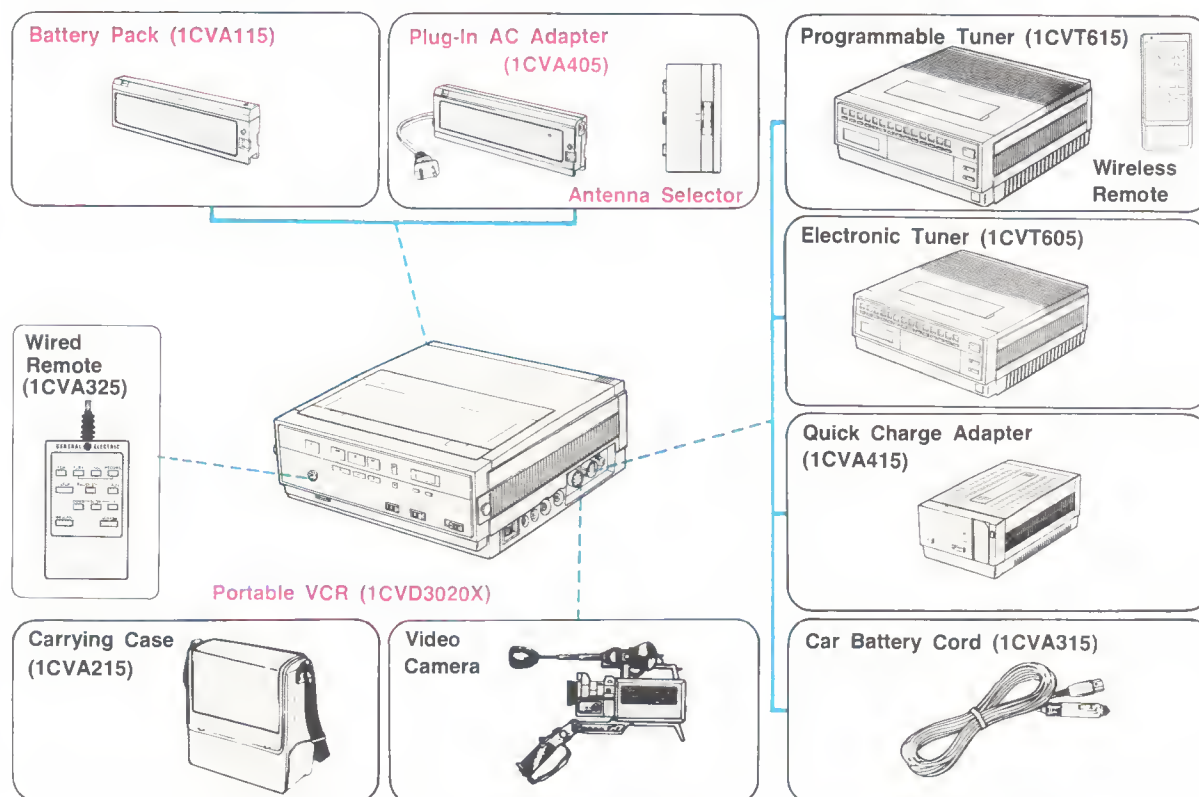
**IMPORTANT** — BEFORE ATTEMPTING TO CONNECT, OPERATE OR ADJUST THIS PRODUCT, PLEASE READ THESE INSTRUCTIONS COMPLETELY.

VQTS0310®

# ABOUT YOUR PORTABLE VCR (1CVD3020X)

This Video Cassette Recorder has been designed to be used with the included and/or optional accessories. Sections of this manual apply exclusively to the operation of the two tuners and the two adapters. These sections are marked as follows: the Programmable Tuner (1CVT615) – (PT), the Electronic Tuner (1CVT605) – (ET), the Quick Charge Adapter (1CVA415) – (QCA), the Plug-in AC Adapter (1CVA405) – (PAC). Sections not marked with a symbol apply to all of the above.

This portable VCR system can be used with the following combination of accessories.



**WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE.**

Save the carton and packing material. A video cassette recorder is a complex electronic instrument. Should it be necessary to transport it for any reason, pack it carefully in the original carton and packing material.

The serial number of these products may be found on the Back of the Recorder and on the surface of the Plug-In AC adapter. No others have the same serial numbers as yours. You should record the numbers and other vital information here and retain this book as a permanent record of your purchase to aid identification in case of theft.

Model No.

Recorder 1CVD3020X

Plug-In AC Adapter 1CVA405

Serial No.

Recorder

Plug-In AC Adapter

**CAUTION: TO PREVENT FIRE OR SHOCK HAZARD AND ANNOYING INTERFERENCE, USE THE RECOMMENDED ACCESSORIES ONLY.**

## SUPPLIED ACCESSORIES

After removing the unit from its box, check to be sure it has not sustained any damage. Also check to see that you have the following accessories.

1 pc. Video Cassette Tape (T-60)	1 pc. Shoulder Strap
1 pc. Battery Pack	1 pc. Antenna Selector
1 pc. VHF Matching Box 75 ohms – 300 ohm Transformer	1 pc. Antenna Selector Switch Holder
1 pc. Audio Input Attenuator	1 pc. 75 ohm – 75 ohm Adaptor
1 pc. Microphone Adaptor	1 pc. 300 ohm – 75 ohm Transformer
2 pcs. Coaxial Cable with One-Touch type F Connector	1 pc. Battery Charging Cord
1 pc. Earphone	1 pc. Plug-In AC Adapter (1CVA405)

## OPTIONAL ACCESSORIES

- Video Cassette Tape:
  - T-160 (8 hour)
  - T-120 (2/4/6 HR.)
  - T-60 (1/2/3 HR.)
- Video Camera
- System Carrying Case (1CVA235)
- Carrying Case (1CVA215)
- Tuner (1CVT615)
- Tuner (1CVT605)
- Quick Charge Adapter (1CVA415)
- Car Battery Cord (1CVA315)
- Cord Converter (1CVA350)
- CATV Adapter (1CVA550)

In addition to the tapes specified, the Recorder will accept any cassette tape which has the **VHS** mark.

It is recommended that only cassette tapes that have been tested and inspected for use in 2, 4, and 6 hour VCR machines be used. (T-160 8 hour tape should soon be available.)

## ACCESSORIES FOR YOUR PORTABLE VCR SYSTEM

	VCR	1CVT615	1CVT605	1CVA415	1CVA405	1CVA325	1CVA315	1CVA215	1CVA115
1CVD3020X	○				○				○
SEPARATE COMPONENTS		○	○	○		○	○	○	○

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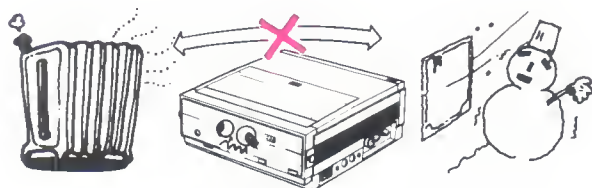
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# PRECAUTIONS

Please read these precautions before you operate this unit.

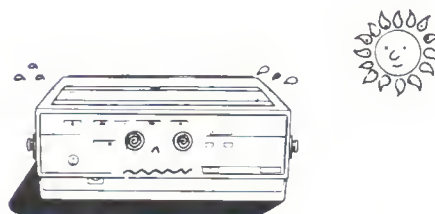
## ■ Avoid sudden changes in temperature

If the recorder is suddenly moved from a cold place to a warm place, moisture may form on the tape and inside the recorder. If this happens, the Dew Indicator in the tape counter will flash on and off and the power will shut off automatically.



## ■ Keep away from high temperature.

Keep the unit away from extreme direct heat such as direct sunlight, heat radiators, or closed automobiles in the summer.



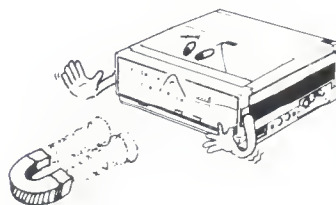
## ■ Humidity and dust

Avoid places where there is high humidity or dust, since these may cause damage to internal parts.



## ■ Keep magnets away.

Never bring a magnet or magnetized object near the unit because it will adversely affect the performance.



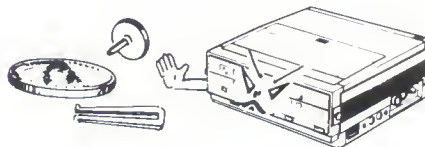
## ■ Don't obstruct the ventilation holes.

The ventilation holes prevent abnormal increase of temperature. Do not block or cover these holes. Especially avoid soft materials such as cloth or paper.



## ■ Do not put fingers or other objects inside.

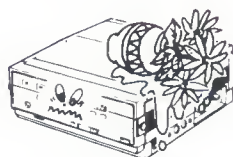
Do not touch the internal parts of this unit or attempt any type of modification. Never insert any metal object into this unit for any reason. It is dangerous and may damage the unit. Do not attempt to disassemble the unit. There are no user serviceable parts inside.





## ■ Keep liquids away.

Keep the unit away from flower vases, tubs, sinks, etc.

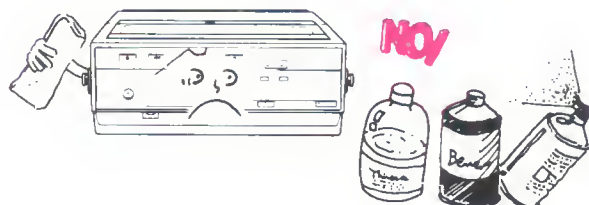


If you use the unit outdoors on a rainy day, take care that it does not become wet.

**CAUTION:** If liquids should be spilled into the unit, serious damage could occur. If you spill any liquid into the unit, consult qualified service personnel before operating.

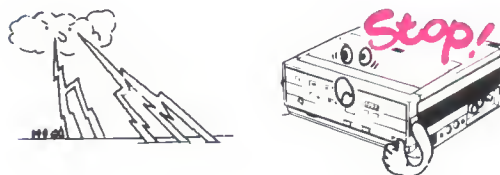
## ■ Cleaning the unit.

Wipe the unit with a clean, dry cloth. Never use cleaning fluid, or similar chemicals. Do not spray any cleaner or wax directly on the unit or use forced air to remove dust.



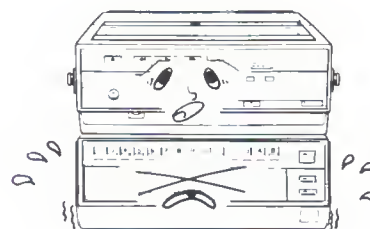
## ■ Thunderstorms.

If lightning occurs while recording outdoors, particularly in a wide open area, stop recording immediately.



## ■ Stacking

Use the recorder in a horizontal or vertical position, but do not place anything heavy on the tuner, such as the recorder.



## ■ Service

Refer any needed servicing to qualified service personnel.

# SYSTEM FEATURES

## 1. Compact and light weight

This truly compact and lightweight Video Cassette Recorder is the result of simplified construction, the reduction in size of various mechanical parts, and the use of ICs (integrated circuitry).

## 2. Eight hour recording

A new system for high-density recording allows up to 6 hours of recording on a single T-120 tape, up to 8 hours of recording on a T-160 tape.

## 3. One touch connection

The Recorder can be connected to the Tuner, Quick Charge Adapter or Car Battery Cord (use the Adapter Cable only).

## 4. Multi-motion Playback

In addition to playback at normal speed, you can operate Multi-motion playback as follows (for tapes recorded in EP speed). (See page 24).

SCAN	forward and reverse at about 9 times normal speed.
STILL-FRAME	to view a single scene.
FINE-SLOW	for noiseless slow-motion.
FRAME ADVANCE	to watch frame-by-frame playback.

## 5. Fine-editing function

This recorder has been designed to eliminate the editing problem common to ordinary VCR's. When the pause feature is used during recording, the tape will automatically rewind slightly to eliminate the break in film continuity.

## 6. Insert

Camera recording may be substituted onto a previously recorded tape at any point.

## 7. Four way power

The Recorder can be operated with a Battery Pack, the Tuner unit, a Car Battery or the Quick Charge Adapter/Plug-In AC Adapter.

## 8. High speed charging

The Quick Charge Adapter (1VCA 415) can charge the battery about 1.5 hour, and the Tuner can charge the Battery within 3 hours. The Plug-In AC Adapter (1CVA 405) will also charge the Battery.

## 9. Watch one channel while recording another

The optional Tuners (1CVT605 and 1CVT615) allow the recording of a program that you don't want to miss while watching another program.

## 10. Unattended recording

The optional Tuners available separately enables you to preset the Portable Video Cassette Recorder to record a TV program while you are away for the day (with model 1CVT605) or to record up to 4 programs within a period of 14 days (with model 1CVT615).

## 11. One Touch Recording

One Touch Recording enables you to do impromptu timer recordings at any time. Just select the channel and push the One Touch Record Button for 30 minutes to 2 hours of recording. (See page 33).

## 12. Remote Control (with optional Tuner)

The 12 function Wired Remote Control Unit 1CVA325 (supplied with 1CVT605 Tuner) provides: REC, PLAY, STOP, FAST FORWARD, REWIND, PAUSE/STILL, SCAN <Forward, Reverse>, FRAME ADV, FINE-SLOW, SLOW SPEED <Up, Down>.

The 16 function Wireless Remote Control Unit (supplied with 1CVT615 Tuner) provides: POWER, REC, PLAY, CHANNEL <Up, Down>, STOP, VCR/TV, FAST FORWARD, REWIND, PAUSE/STILL, SCAN <Forward, Reverse>, FRAME ADV, FINE-SLOW, SLOW SPEED <Up, Down>.

If no Tuner is desired, an optional 12 function Wired Remote Control Unit is available as model 1CVA325.

## 13. Special Cable Channels

When used with cable systems, the extended range Tuner, 1CVT615, allows reception of standard Mid-Band (Channels A-I) and Super-Band (Channels J-W) TV programs. However, reception of intentionally scrambled programs may require special equipment from your cable company.

**WARNING: ONE FEDERAL COURT HAS RULED THAT IN-HOME RECORDING OF COPYRIGHTED TELEVISION PROGRAMS IS COPYRIGHT INFRINGEMENT. USERS SHOULD NOT RECORD SUCH PROGRAMS.**

## Types of Video Cassette

Use types with the **VHS** mark in this unit.

Tape Speed Selector position	MAXIMUM RECORD/ PLAYBACK TIME		
	T-160	T-120	T-60
SP (Standard Play)	2.7 HRS.	2HRS.	1HR.
LP (Long Play)	5.3 HRS.	4HRS.	2HRS.
EP (Extended Play)	8 HRS.	6HRS.	3HRS.

## Notes For Video Cassette Use

Video Cassettes and their tape are made with high precision.

Be sure to observe the following points.

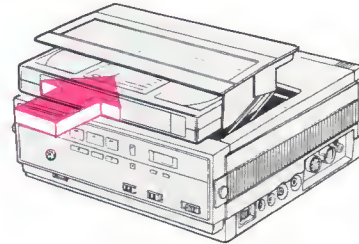
- Don't subject the tape to unnecessary movement.
- Don't insert and eject the Video Cassette over and over again, because this may result in tape looseness or scratches on the tape.
- Never try to disassemble the cassette or splice the tape.
- Don't open the cassette, touch the tape, or put anything inside the cassette.

## Video Cassette Storage

- Avoid places with high humidity or dust.
- Avoid places where there is magnetism (magnets, motors, transformers, speakers, etc.)
- Avoid dropping the cassette; don't subject it to intense shaking or vibration.
- Don't place cassettes in direct sunlight; keep them away from sources of heat.

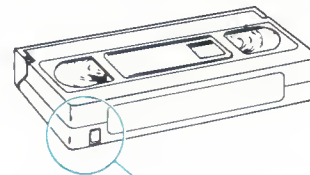
## Insert Video Cassette Correctly

Video Cassettes can only be used with the window side up, and the arrow pointing away from you. Do not attempt to insert a cassette which is upside down or backwards;



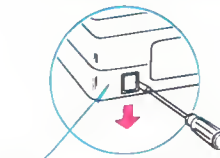
## Accidental Erasure Prevention

- Accidental erasure of recorded material can be prevented by breaking off the tab on the rear of the cassette with a screwdriver or similar tool. This will cause the erasure prevention mechanism to function.
- If, for any reason, you later want to record on a cassette which has been protected as described above, recordings can be made by covering the hole (where the tab was) with cellophane tape.



Accidental Erase Prevention Tab

### ● To prevent accidental erasure



Break off the tab with screwdriver

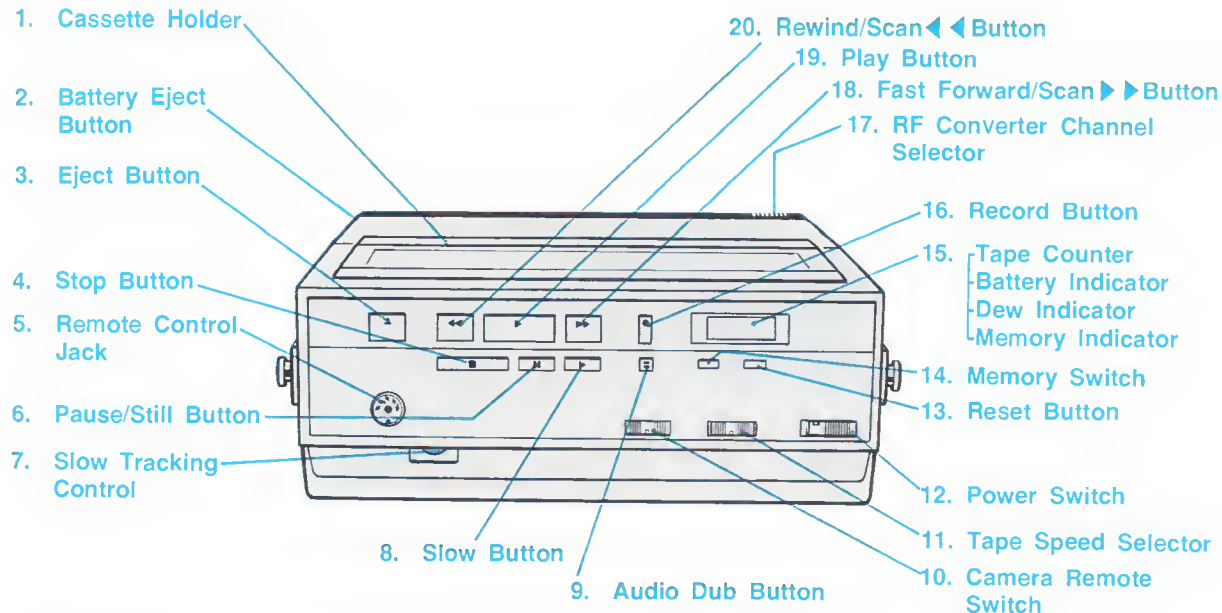
### ● To record again



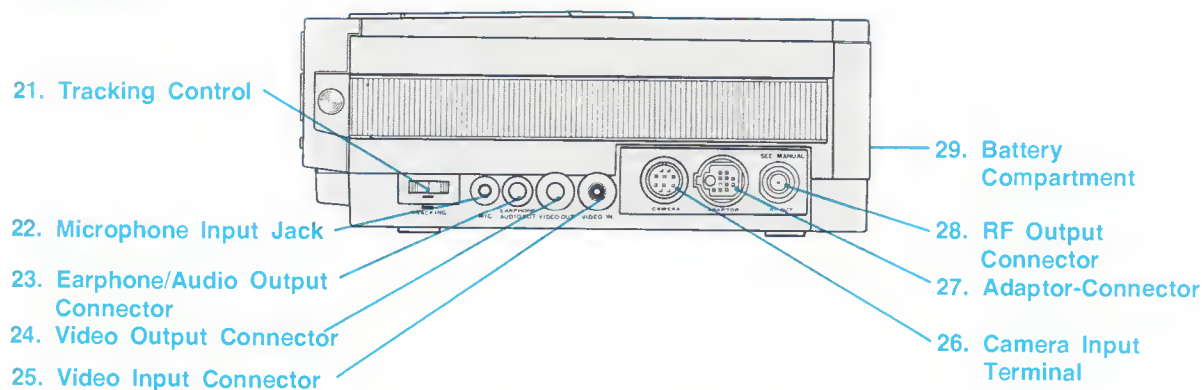
Cover the hole with cellophane tape

# LOCATION AND FUNCTION OF CONTROLS (1CVD3020X RECORDER)

## TOP and FRONT



## SIDE VIEW



## FUNCTIONS

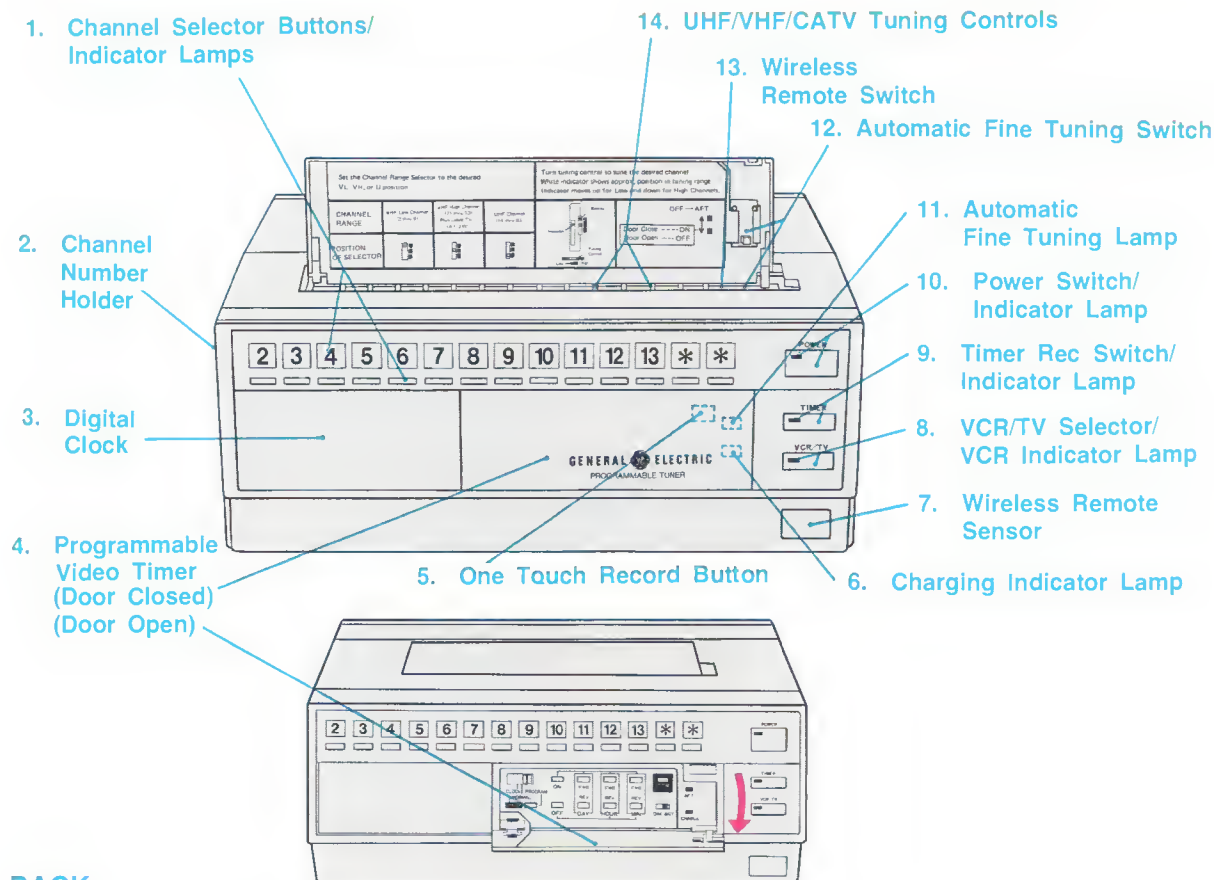
- 1. Cassette Holder**
- 2. Battery Eject Button**  
Press this button to remove the Battery pack or the Plug-in AC Adapter.
- 3. Eject Button**  
Press this button to insert or to remove cassette. The cassette cannot be ejected while the tape is moving. The power must be ON and, if connected to a tuner or an Quick Charge Adapter, it must be ON, also.
- 4. Stop Button**  
Press this button to stop the tape.
- 5. Remote Control Jack**  
This jack is used for connecting the Wired Remote Control unit of the 1CVT605 Tuner.
- 6. Pause/Still Button**  
Press this button to temporarily stop tape movement in either the recording or playback mode. During EP playback, a still-frame picture is produced when pause is in use. Press again to release pause.
- 7. Slow Tracking Control**  
Tracking Control for use with Slow-motion. (See page 24)



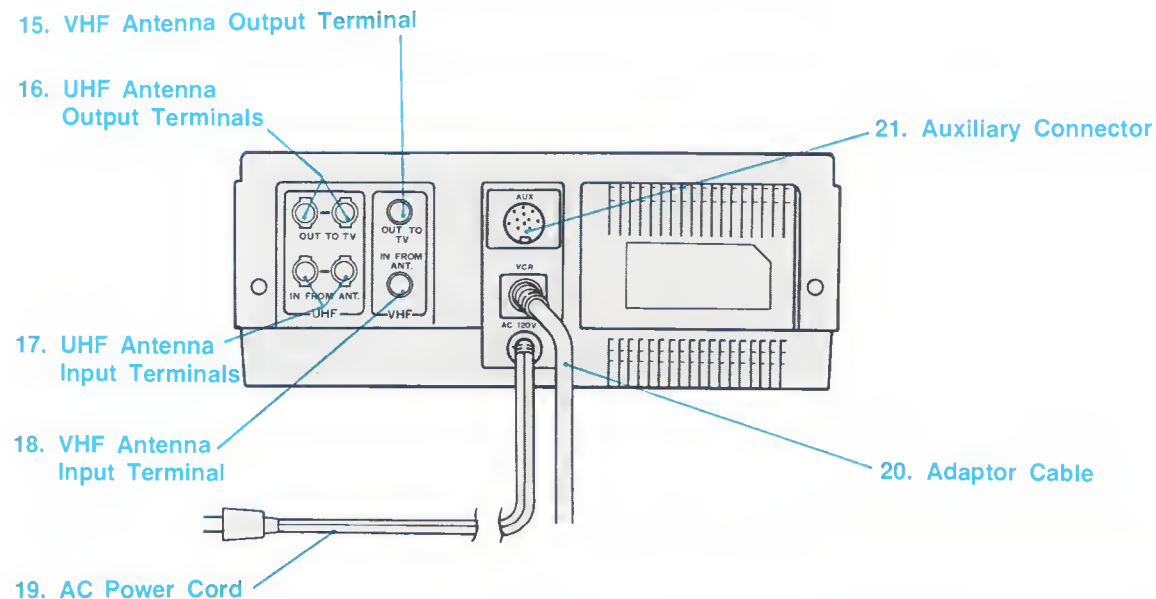
8. **Slow Button**  
Press this button for Slow-motion playback of tapes recorded in EP speed.
9. **Audio Dub Button**  
When this button is pressed simultaneously with the Play Button during playback, sound from another source can be recorded on the tape in place of the original sound. (The original sound will be erased.) (See page 39.)
10. **Camera Remote Switch**  
When camera recording by remote control, this switch must be set to ON. Set it to OFF at other times.
11. **Tape Speed Selector(SP/LP/EP)**  
Set this selector depending upon the length of the program. (See page 6.)
12. **Power Switch**  
This switch is used to turn the VCR deck ON and OFF.
13. **Reset Button**  
Pressing this button causes the Tape Counter to return to "0000".
14. **Memory Switch**  
When this switch is in the "ON" position, ("M" in corner of counter window) the tape will stop during fast forward and rewind when the tape counter reaches "0000". This can be used to return the tape to a pre-selected position immediately after recording.
15. **Tape Counter**  
By beginning the recording at "0000" subsequent playback will be more convenient.
- Battery Indicator**  
This indicates the remaining battery charge. (See page 38.)
- Dew Indicator**  
If condensation occurs in the VCR, the Dew Indicator will flash on and off for 3 seconds when the VCR is turned ON and the VCR will be turned OFF automatically. Should this happen, wait until the Indicator no longer lights up when the Switch is turned ON again. (See page 20.)
- Memory Indicator**  
"M" is indicated when the Memory Switch is ON.
16. **Record Button**  
Press this button and the Play button at the same time to start recording.
17. **RF Converter Channel Selector**  
Set to channel 3 or 4, whichever is not used in your area. The switch is under the plastic cap on the top rear corner.
18. **Fast Forward/Scan▶▶Button**  
Press this button to move the tape forward rapidly. During the play mode, pressing this button will allow you to view the tape in the forward direction at about 9 times the recorded tape speed (when recorded at EP speed).
19. **Play Button**  
Press this button to play back recorded tapes.
20. **Rewind/Scan◀◀Button**  
Press this button to rewind tapes. During the play mode, pressing this button will allow you to view the tape in reverse at about 9 times the recorded tape speed (when recorded at EP speed).
21. **Tracking Control**  
Turn this control during playback if the image is partially obscured by bands of noise.
22. **Microphone Input Jack**  
For connection of a MIC Adapter (included) or an Audio Input Attenuator(included). This is useful for recording and audio dubbing.
23. **Earphone/Audio Output Connector**  
For connection to a monitor TV, another VCR, an Audio Tape Recorder or the Earphone.
24. **Video Output Connector**  
For connection to a monitor TV or another VCR.
25. **Video Input Connector**  
For connection from another VCR on other Video Source.
26. **Camera Input Terminal**  
For connection of a Portable Video Camera(optional).
27. **Adaptor Connector**  
This can be used to connect the Recorder to the Tuner, the Quick Charge Adapter or the Car Battery Cord with only one connection.
28. **RF Output Connector**  
For connection to a TV. This connector is the signal output connector from the RF Converter. (Channel 3 or 4.)
29. **Battery Compartment**

# LOCATION AND FUNCTION OF CONTROLS (1CVT615 TUNER) (Optional) PT

## TOP and FRONT



## BACK



## FUNCTIONS

### 1. Channel Selector Buttons/Indicator Lamps

Select the channels (2 – 83, A – W) you wish to view or record by pressing any one of these 14 buttons.

### 2. Channel Number Holder

### 3. Digital Clock

### 4. Programmable Video Timer

Use this Timer to make an unattended recording when you are away from home, busy or asleep.

### 5. One Touch Record (O.T.R.) Button

One Touch Recording enables you to do impromptu recordings at any time. Just select the channel and push the One Touch Record Button for 30 minutes to 2 hours of recording.

### 6. Charging Indicator Lamp

Lights when Battery is being charged. When the charging has been completed, this lamp will go off.

### 7. Wireless Remote Sensor

Receives signal from Wireless Remote Control Unit when the Wireless Remote Switch is ON.

### 8. VCR/TV Selector/VCR Indicator Lamp

VCR: Set at the VCR position for video recording or playback. (Indicator light on.)

TV: Set at the TV position to watch TV, and view another program while recording a different program. (Indicator light out.)

### 9. Timer Rec Switch/Indicator Lamp

This switch is used for unattended recording after programming functions have been completed. When this switch is ON, you will not be able to operate the unit manually.

Lights when the timer is ON, and a program has been entered.

### 10. Power Switch/Indicator Lamp

This switch is used to turn the Tuner unit Power ON and OFF. (Timer Rec Switch must be in OFF position.)

### 11. Automatic Fine Tuning (AFT) Lamp

The Lamp lights up to indicate that the Automatic Fine Tuning is engaged.

### 12. Automatic Fine Tuning (AFT) Switch

When the Tuning Control Panel door is opened the AFT circuit is defeated (AFT Lamp turns OFF). Close the Tuning Control Panel door (AFT Lamp turns ON) to engage the AFT.

### 13. Wireless Remote Switch

This switch allows the Wireless Remote Control to turn the Tuner ON and OFF. Switch must be in ON position for remote control to function.

### 14. UHF/VHF/CATV Tuning Controls

There are fourteen positions available (fourteen buttons) and each one can be tuned to any channel you desire. The Tuner can tune the mid-band and Super-band channels used by many cable companies.

### 15. VHF Antenna Output Terminal (To TV Set)

Connect this terminal to the VHF antenna terminal on the TV.

### 16. UHF Antenna Output Terminals (To TV Set)

Connect these terminals to the UHF antenna terminals on the TV.

### 17. UHF Antenna Input Terminals (From Antenna)

Connect the UHF antenna to these terminals.

### 18. VHF Antenna Input Terminal (From Antenna or CABLE)

Connect the VHF antenna or CABLE to this terminal.

### 19. AC Power Cord

Connect to a 120V AC outlet.

### 20. Adaptor Cable

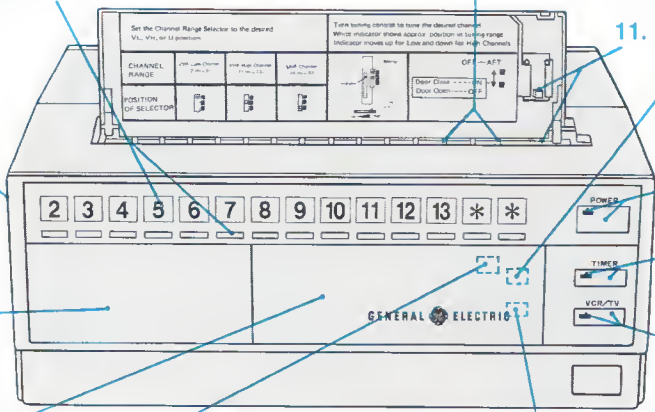
Connect to the Adaptor Connector of the Recorder.

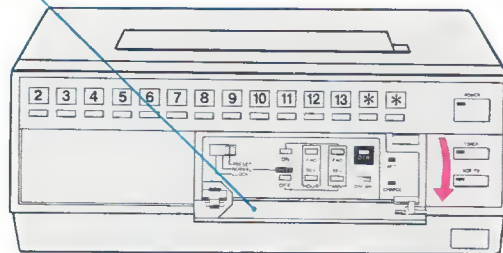
### 21. Auxiliary Connector

This five pin terminal permits connecting the CATV Adaptor-(1CVA550). (See page 17.)

# LOCATION AND FUNCTION OF CONTROLS (1CVT605 TUNER) (Optional)

## TOP and FRONT

- 
1. Channel Selector Buttons/ Indicator Lamps
2. Channel Number Holder
3. Digital Clock
4. Video Timer (Door Closed) (Door Opened)
5. One Touch Record Button
6. Charging Indicator Lamp
7. VCR/TV Selector/ VCR Indicator Lamp
8. Timer Rec Switch/ Indicator Lamp
9. Power Switch / Indicator Lamp
10. Automatic Fine Tuning Lamp
11. Automatic Fine Tuning Switch
12. UHF/VHF Tuning Controls



## BACK

13. VHF Antenna Output Terminal
14. UHF Antenna Output Terminals
15. UHF Antenna Input Terminals
16. VHF Antenna Input Terminal
17. AC Power Cord
18. Adaptor Cable
19. AC Outlet

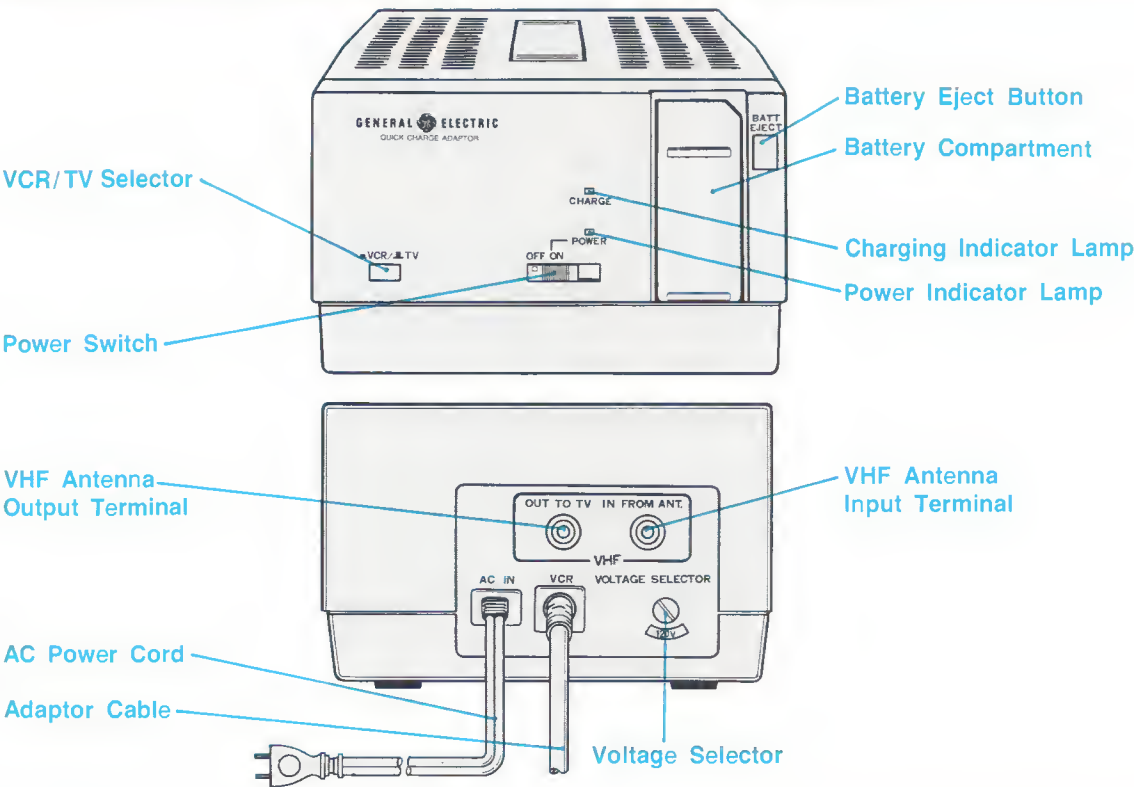


## FUNCTIONS

1. **Channel Selector Buttons/Indicator Lamps**  
Select the channels (2-83) you wish to view or record by pressing any one of these 14 buttons.
2. **Channel Number Holder**
3. **Digital Clock**
4. **Video Timer**  
Use this Timer to make an unattended recording when you are away from home, busy or asleep.
5. **One Touch Record (O.T.R.) Button**  
One Touch Recording enables you to do impromptu recordings at any time. Just select the channel and push the One Touch Record Button for 30 minutes to 2 hours of recording.
6. **Charging Indicator Lamp**  
Lights when Battery is being charged. When the charging has been completed, this lamp will go off.
7. **VCR/TV Selector/VCR Indicator Lamp**  
VCR: Set to VCR position for video recording or playback. (Indicator light on.)  
TV: Set to TV position to watch TV, and to view one program while recording a different program. (Indicator light out.)
8. **Timer Rec Switch/Indicator Lamp**  
This switch is used for unattended recording after timer programming functions have been completed. When this switch is ON, you will not be able to operate the unit manually.  
The Lamp lights when the Timer is ON, and a program has been entered.
9. **Power Switch/Indicator Lamp**  
This switch is used to turn the Tuner unit Power ON and OFF. (Timer Rec Switch must be in OFF position.)
10. **Automatic Fine Tuning(AFT)Lamp**  
Lights up to indicate that Automatic Fine Tuning is engaged.
11. **Automatic Fine Tuning (AFT) Switch**  
When the Tuning Control Panel door is opened the AFT circuit is defeated (AFT Lamp turns OFF). Close the Tuning Control Panel door (AFT Lamp turns ON) to engage the AFT.
12. **UHF/VHF Tuning Controls**  
There are fourteen positions available (fourteen buttons) and each one can be tuned to any channel you desire.
13. **VHF Antenna Output Terminal (To TV Set)**  
Connect this terminal to the VHF antenna terminal on the TV.
14. **UHF Antenna Output Terminals (To TV Set)**  
Connect these terminals to the UHF antenna terminals on the TV.
15. **UHF Antenna Input Terminals (From Antenna)**  
Connect the UHF antenna to these terminals.
16. **VHF Antenna Input Terminal (From Antenna)**  
Connect the VHF antenna to this terminal.
17. **AC Power Cord**  
Connect to a 120V AC outlet.
18. **Adaptor Cable**  
Connect to the Adaptor Connector of the Recorder.
19. **AC Outlet**  
Convenience outlet for another appliance, (such as a television), with 120V AC and not more than 300 watts.

LOCATION AND FUNCTION OF CONTROLS (1CVA415 QUICK CHARGE Adapter) (Optional)

QCA TOP and FRONT of 1CVA415 (QUICK CHARGE ADAPTER)



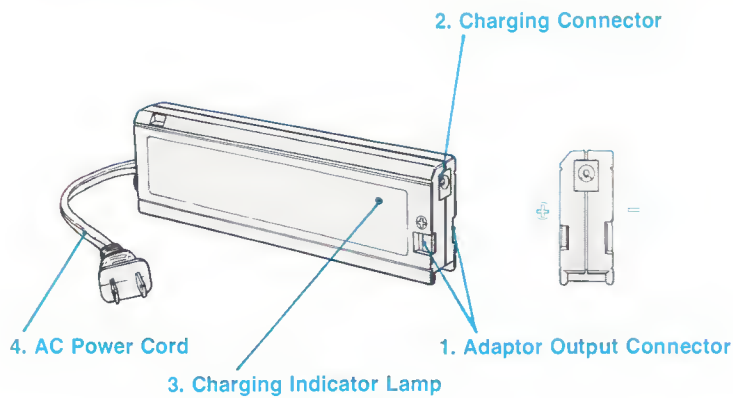
**CAUTION:** The Selector has been set at the factory to 120V AC (standard in the U.S.A. and Canada). If you will be using this Adapter in a country with different voltage (100V, 220V, 240V), you must adjust the Voltage Selector. To adjust, unplug this Adapter from the wall outlet using a small screwdriver, turn the Voltage Selector until the appropriate voltage number appears in the window.

SETTING THE VOLTAGE SELECTOR				
LOCAL VOLTAGE	AC100V	AC120V	AC220V	AC240V

**CAUTION:** Operation at a voltage setting 100/220/240V AC may require the use of an adapter plug. Please contact either a local or foreign electrical parts distributor for assistance in selecting an appropriate adapter.



## 1CVA405 (PLUG-IN AC ADAPTER)



### 1. Adaptor Output Connector

When the unit is inserted, this connector contacts the DC Input Connector in the Recorder.

### 2. Charging Connector

When removed for Battery charging, connect the Battery Charging Cord to this connector.

### 3. Charging Indicator Lamp

Lights while the Battery is charging. After charging, this lamp will go off.

### 4. AC Power Cord

Any 100/120 V AC Power Source can be connected without adjusting.

## Quick Charge Adapter

The Quick Charge Adapter allows you to play back recorded tapes on the recorder without being connected to a separate tuner. It can also be used to recharge the battery pack.

The 1CVA415 Quick Charge Adapter has, in addition, a voltage selector that allows you to operate the recorder deck and recharge the battery from multiple voltage sources.

With the 1CVA415, you can also select TV viewing (broadcast VHF signals) or VCR viewing by simply pressing the VCR/TV switch. With the 1CVA405, an Antenna Selector is supplied that effectively accomplishes the same thing as the VCR/TV switch on the 1CV415.

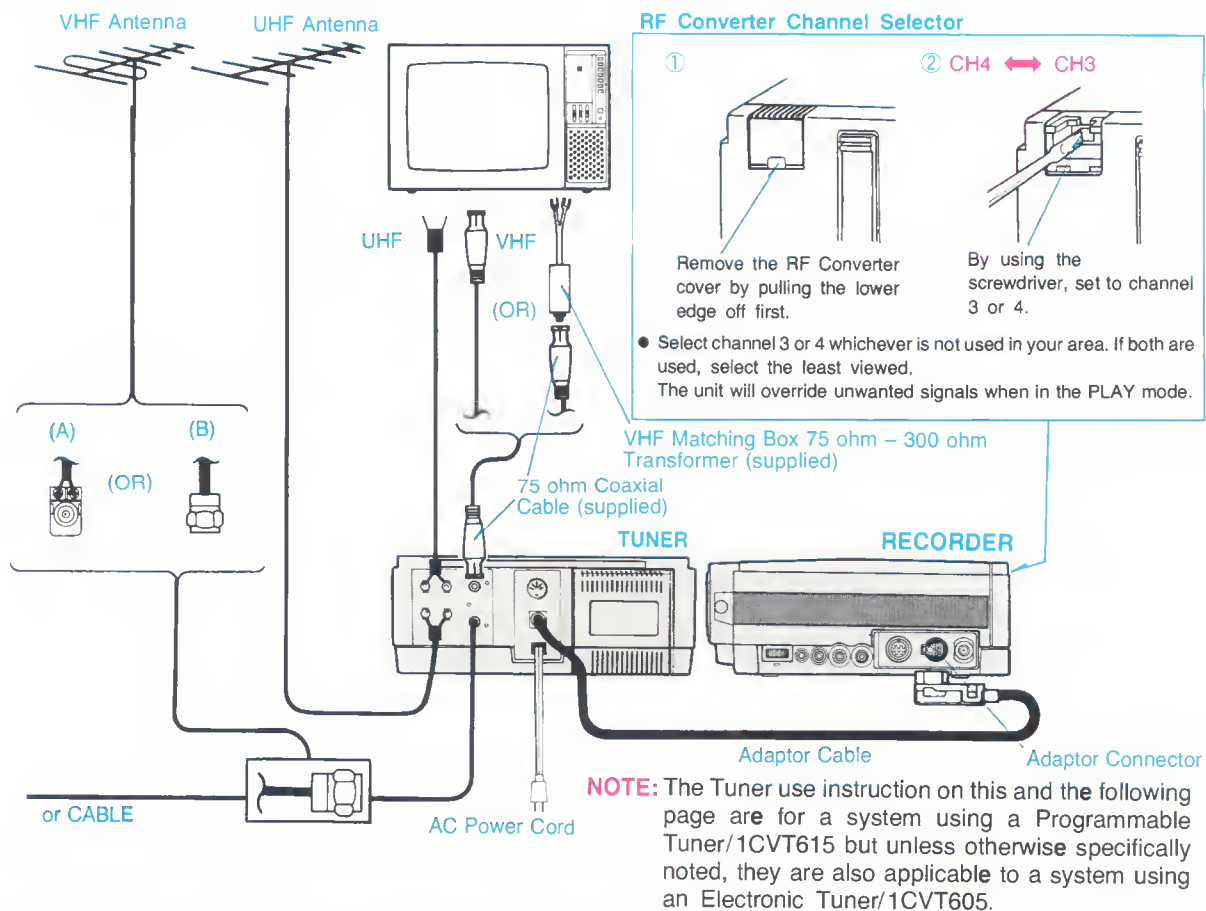
## A. CONNECTING TV, TUNER AND RECORDER (TV Recording & Playback)

- **Connecting the antennas to the tuner —**

- **Connecting the tuner to the recorder —**

- **Connecting the tuner to the TV —**

- Connect the UHF terminals with the twin-lead cable (supplied with tuner).
- Connect the VHF terminals with the 75 ohm coaxial cable (supplied). If your TV does not have a coaxial cable connector, use the 75 ohm to 300 ohm transformer (supplied).





## B. CONNECTING TV, QUICK CHARGE ADAPTER AND RECORDER (playback Recorded Tapes)

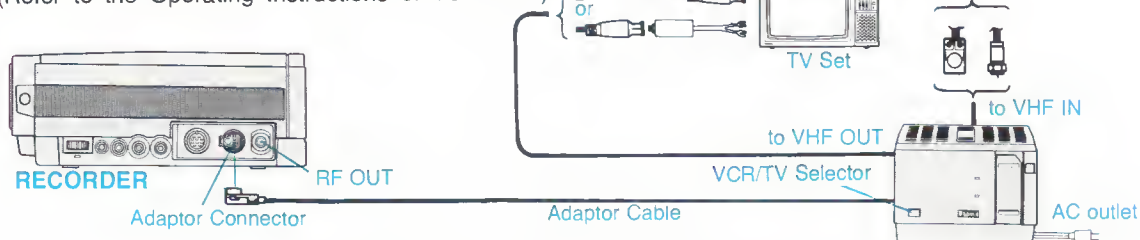
**Note:** You cannot record TV programs using Quick Charge Adapter.



### Using QUICK CHARGE Adapter/(1CVA415) (optional)

Connect as shown below.

(Refer to the Operating Instructions of 1CVA415.)

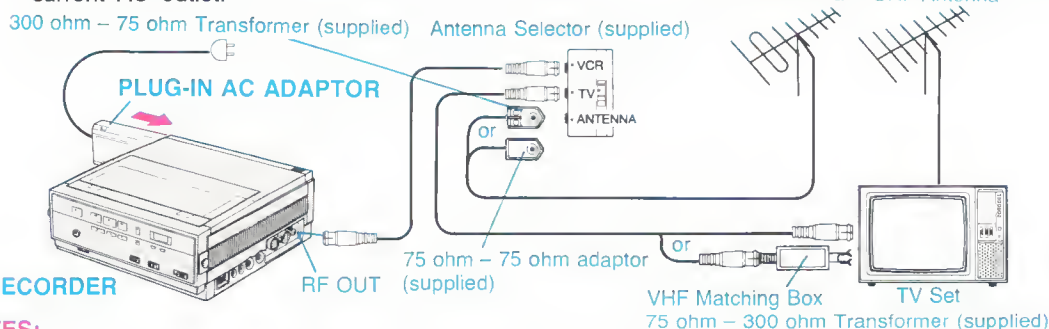


- Be sure the Battery and Plug-In AC Adapter are not plugged in the Recorder.
- The RF OUT and Adaptor Connector can not be used at the same time.



### Using Plug-In AC Adapter/(1CVA405) (included)

Insert the Adapter into the side of the recorder as shown. Plug the Adapter power cord into standard house current AC outlet.



#### NOTES:

- Make sure the Recorder Power Switch is OFF when you plug the unit into the Recorder.
- When the Recorder is used with Tuner or the QUICK CHARGE Adapter, Remove this unit from the Recorder.
- Set the Antenna Selector to VCR to watch playback of VCR recording, To watch TV normally set it to ANTENNA.

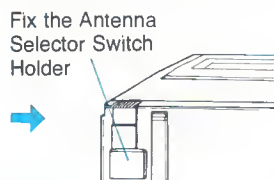
#### How to connect the Antenna Selector to the Recorder

(Move the VCR/TV Selector to the proper position.)

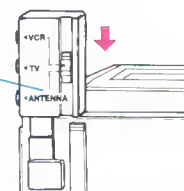
Remove the RF Converter cover by pulling the lower edge off



(Back of the RECORDER)



Insert the Antenna Selector



#### How to attach the 75 ohm – 75 ohm Adaptor to the VHF antenna coaxial cable.

1. Prepare the end of the cable as shown. The length of the solid copper conductor, polyethylene dielectric and braided shield should be measured and cut carefully.



2. Take off the plastic cover of the Adaptor and the metal shield.

push



Vinyl jacket



3. Attach the end of the cable to the Adaptor as shown and crimp it to hold it firmly in place.



crimp

4. Replace the metal shield and plastic cover on the Adaptor.



# SYSTEM CONNECTIONS

## C. CONNECTING CABLE TV TO THE TUNER

### Cable Signals

Cable TV is becoming increasingly more popular with television viewers because of the number of channels available and special programming. Many cable companies offer 30 or more channels (VHF channels 2-13, mid-band channels A-I, and super-band channels J-W) plus special pay or subscription channel services. Often these special pay or subscription channels are intentionally scrambled by the cable companies and you can only view them by using their "descrambler" box.

The cable company may have furnished you with a converter box so that you can receive the 30 or more standard channels (not scrambled). You can use this box to select channels.

Also, if you subscribe to a special channel that is scrambled, the cable company probably provided you with a descrambler box for proper reception.

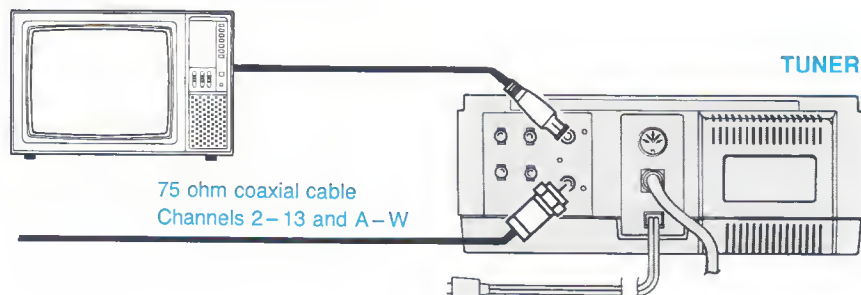
### PT 1CVT615 Tuner

This tuner has been designed with an extended range so that it can tune the VHF channels, the mid-band channels, the super-band channels, and can also tune the 70 UHF channels (14-83). With this extended range, you may find it unnecessary to use the cable company converter box, i.e., you can select channels at the tuner instead of at the converter box. The advantage of this is that it allows you to use the remote control feature of the tuner.

If, however, you subscribe to a service that is scrambled, note that the 1CVT615 tuner by itself cannot properly receive a scrambled program, since it does not contain a descrambler. In order to use your remote control feature in cases like this, you need a separate switch (contact your cable company) to bypass the descrambler to view the unscrambled signals using your tuner controls. See the basic hook-up shown below.

### BASIC HOOK-UP

Since the unit can tune Mid and Super Bands, this connection will provide reception of all cable channels except those which are intentionally scrambled.



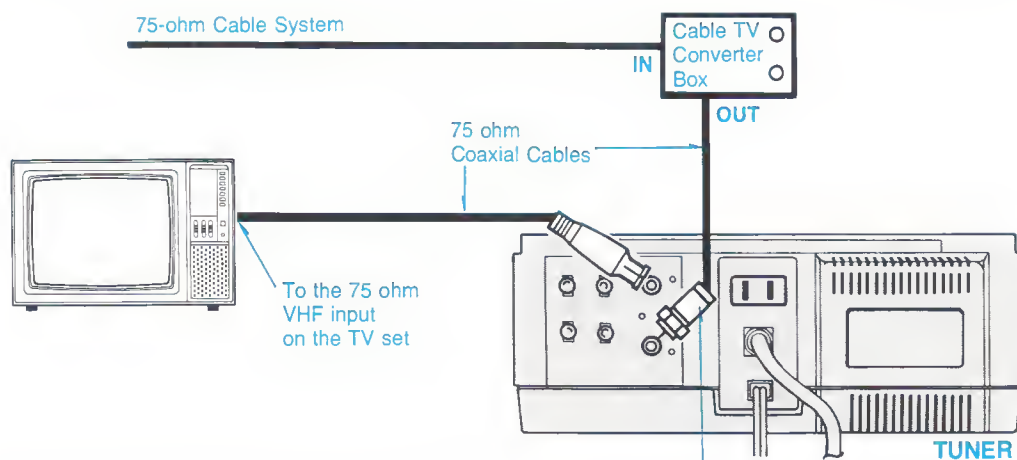
Since the 1CVT615 has extended range, tuning and programming of non-scrambled Mid-Band and Super-Band TV programs is possible, but when a cable converter or descrambler box is connected to the unit, all unattended recording functions will continue to operate with the exception of changing channels automatically. Channel selection will have to be performed with the cable converter. Unattended recording is therefore limited to one channel at any given time.

The feature of recording one program while watching another program can be used by connecting a General Electric switch kit, catalog number 5-1902 (available from General Electric Company, P.O. Box 7025, Charlotte, NC 28210).

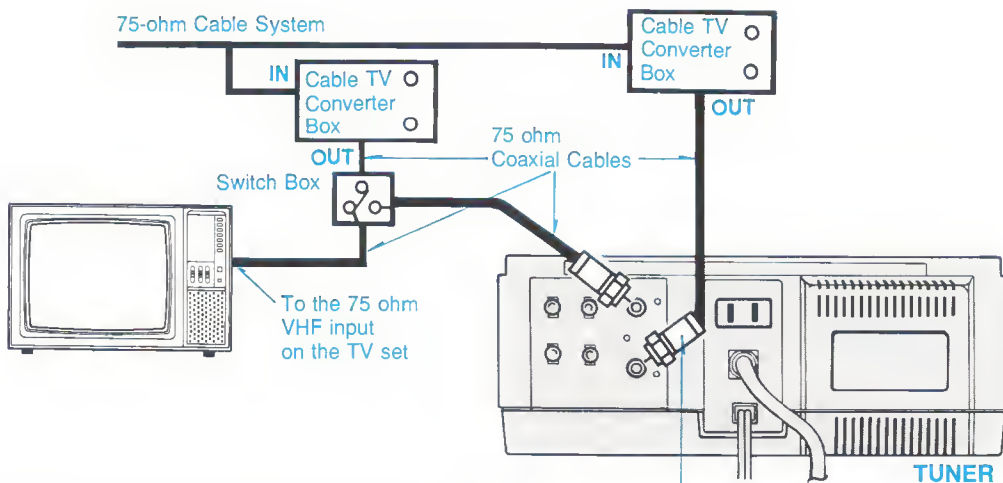
Also available is a CATV Adapter, 1CVA550. This adapter enables the VCR to receive, record and play back both regular CABLE programs and pay CABLE programs, automatically. The all electronic switching feature of the CATV Adapter makes other forms of switching unnecessary.

**ET 1CVT605 Tuner**

This tuner will tune the 12 VHF channels (2-13) and can also tune the 70 UHF channels (14-83). Shown below are typical cable system hook-ups.

**TYPICAL CABLE SYSTEM HOOK-UPS WITH CABLE CONVERTER/DESCRAMBLER BOXES**

The above cable hook-up allows VCR-TV functions except for viewing one channel while recording another channel.



The above cable hook-up allows VCR-TV functions, including viewing one channel while recording another channel, but it requires two cable TV converter boxes and one cable switch.

**D. CONNECTING THE RECORDER TO VIDEO CAMERA**

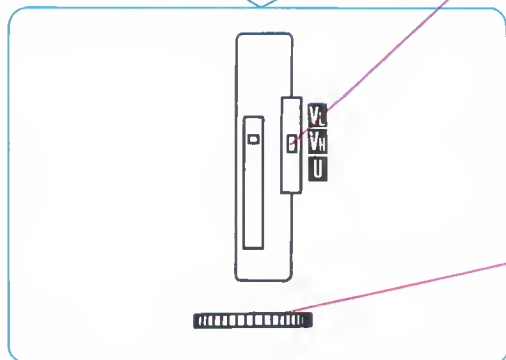
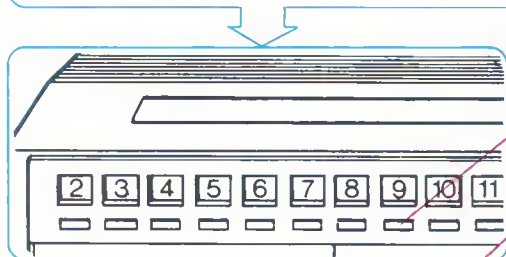
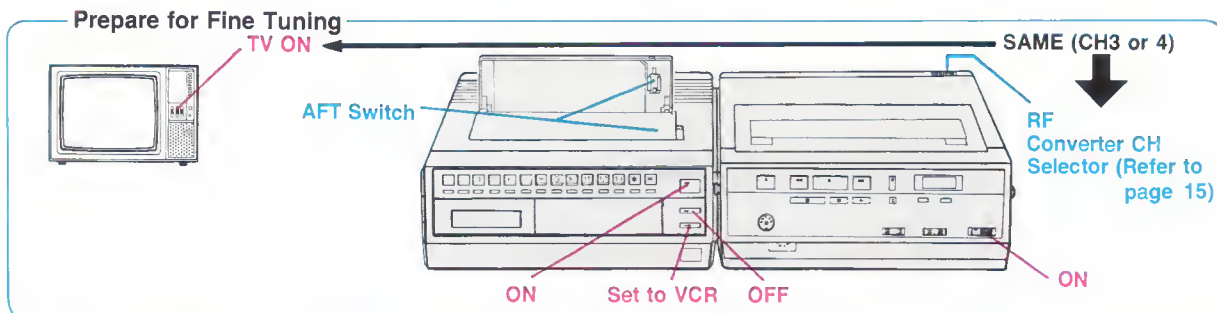
Refer to the discussion about the video camera on page 35.

# CHANNEL SELECTION AND TUNING PT ET

The tuners have been factory preset to receiver 12 VHF channels(2-13). Select the VHF channel to be recorded by pressing one of the channel selector buttons.

Normally fine tuning will not be required on these channels. Fine tuning, however, is necessary for UHF channels 14-83 and mid-band and super-band cable channels. If you live in a UHF only area, it will be necessary to fine tune the tuner before fine tuning your TV.

**NOTE:** The RF Connector switch on the Recorder(under the tab at the top rear corner) must be set to either channel 3 or 4, whichever is unused in your area. Set the TV channel selector to the same channel.



Low ↔ High

There are fourteen tuning positions available (fourteen buttons) and each one can be tuned to any channel you desire.

## To change tabs, follow these instructions:

To identify which channel you have tuned in each channel position, remove the Channel Number holder from the left side of the tuner, insert the newly tuned channel number tab (supplied) in the proper position and reinsert the channel number holder.

① Press the CHANNEL SELECTOR BUTTON for the channel you wish to tune.

② Set the CHANNEL RANGE SELECTOR to correspond to the channel selected.

Channel Range	Position of Selector
VHF 2-6	VL
Mid-Band A-I*	VH
VHF 7-13	
Super-Band J-W*	U
UHF 14-83	

ET 1CVT605 does not have the cable channels. (\*Mid-Band and Super-Band indication.)

③ Rotate TUNING CONTROL until the picture on your TV is satisfactory.

- When rotating the tuning control to the right, the white indicator moves down for high channel range. When rotating the tuning control to the left, this indicator moves up for low channel range.

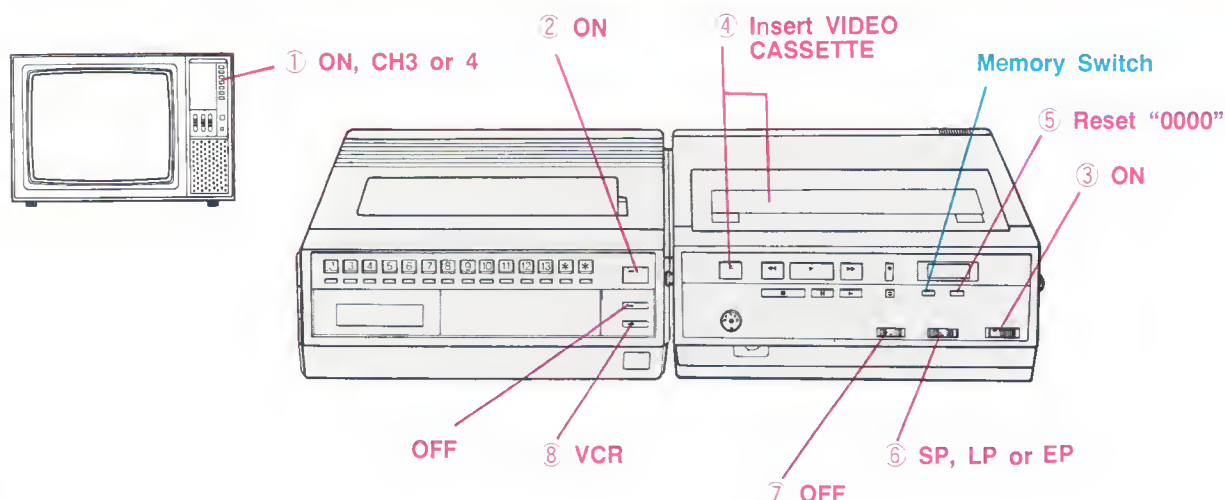
- If reception for all VHF stations is unsatisfactory, fine-tune ONLY channel 3 or 4 on your TV. If just one or two stations are unsatisfactory, retune them on the tuner. For additional information on how to fine-tune your TV, refer to the TV owner's manual.

- Repeat step 1 - 3 for each channel you desire to tune.

④ Close the cover for the AFT to function.

- Opening this cover switches the AFT OFF.





## To Prepare for recording and playback

- ① Turn TV ON and Select CHANNEL 3 or 4.
- ② Turn TUNER ON.
- ③ Turn RECORDER ON.
- ④ Press EJECT Button, insert VIDEO CASSETTE.
- ⑤ Press RESET Button, reset TAPE COUNTER to "0000".
- ⑥ Set TAPE SPEED SELECTOR to SP, LP or EP.
- ⑦ Set CAMERA REMOTE Switch to OFF.
- ⑧ Set VCR/TV SELECTOR to VCR.

- To wind the tape forward, push FAST FORWARD Button.
- To wind the tape backward, push REWIND Button.

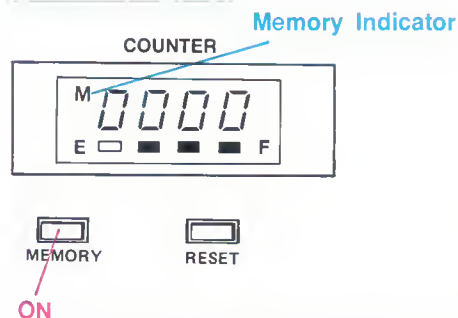
## After you finish recording and playback

1. Press EJECT Button, remove VIDEO CASSETTE.
2. Turn TUNER, RECORDER and TV OFF.

### NOTE:

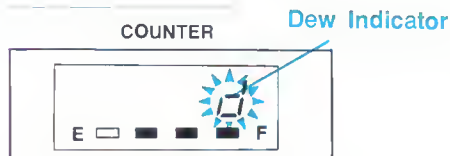
- Do not turn TIMER REC Switch ON.
- Make a habit of fully rewinding the tape by pushing REWIND Button before Eject.
- ⓀⒶ Basic Operation with Quick Charge Adapter is same as above.

### Memory Switch



- To easily find the beginning of the recording again, turn MEMORY Switch ON. "M" appears in upper left corner of display window. When you wind the tape by pushing REWIND or FAST FORWARD Button, the tape will automatically be wound to the point where Tape Counter is set to "0000".

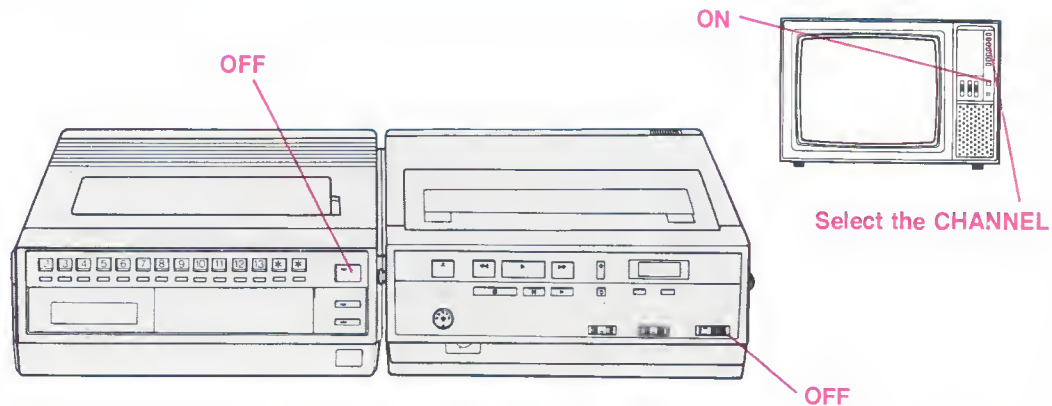
### Dew Indicator



- If any condensation occurs in the unit when the VCR is turned ON the Dew Indicator will flash on and off for 3 seconds as shown above, and the VCR will automatically be turned OFF. In this case, wait until the indicator no longer flashes when the VCR is turned ON again.

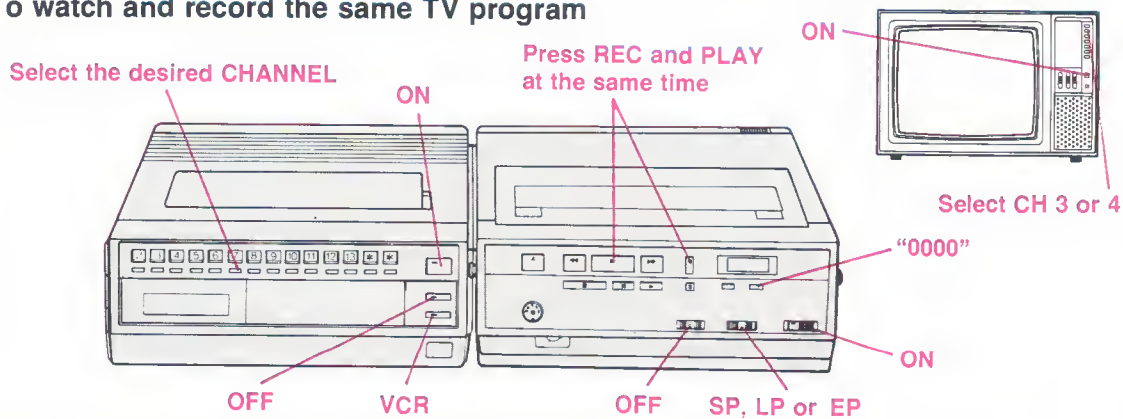
**First** Refer to BASIC OPERATION.

## To watch TV normally

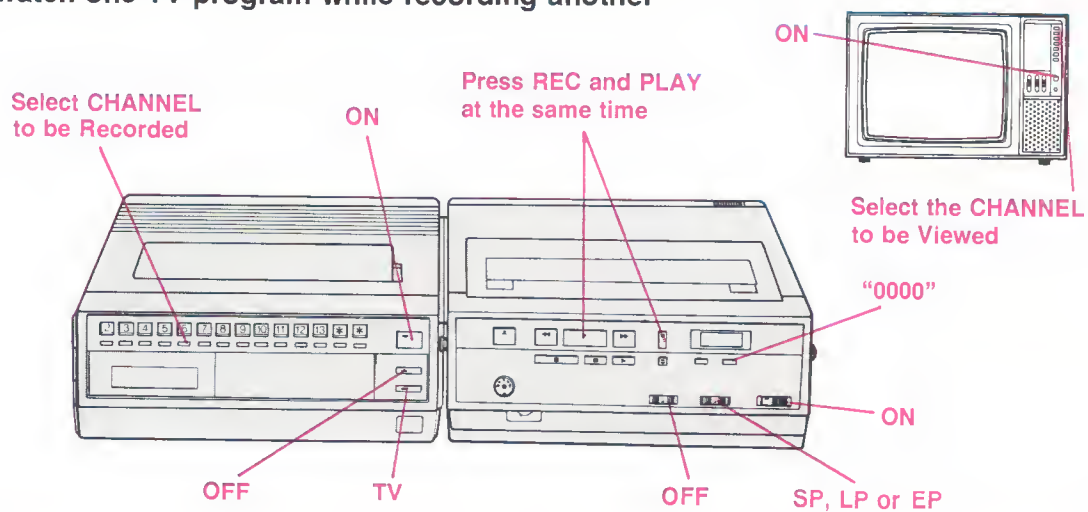


## Recording

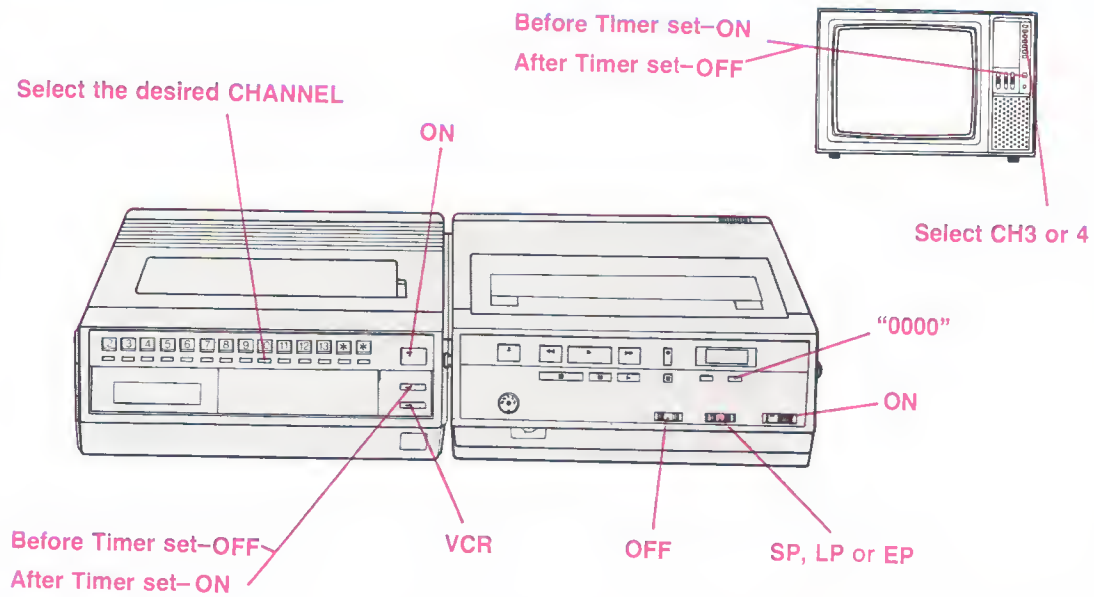
### To watch and record the same TV program



### To watch one TV program while recording another

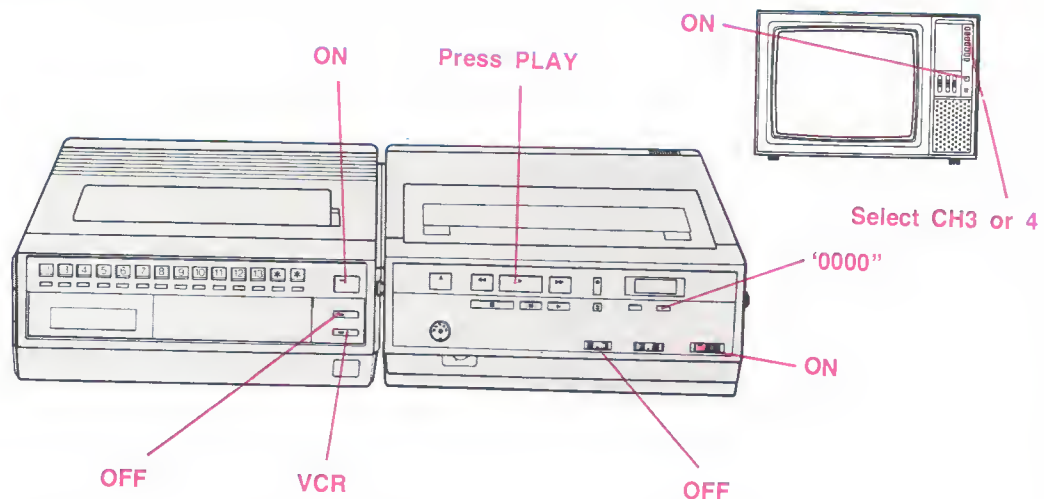


## Timer Recording



● Refer to TIMER RECORDING

## Playback

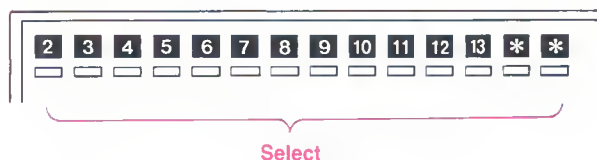


**NOTE:** When the tape reaches its end during recording, playback or Fast Forward, the tape will be rewound automatically.

# RECORDING

**First** Refer to BASIC OPERATION and EASY OPERATION GUIDE.

- ① Select CHANNEL to be recorded and confirm proper reception on the TV.



● Ensure the Erasure Prevention Tab is in place on the cassette.

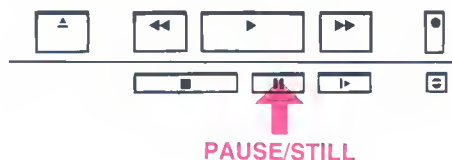
- ② Push RECORD Button together with PLAY Button.



● It is possible to change the Tape Speed Selector while you are actually recording but a momentary distortion will appear at the point where Tape Speed Selector was changed when you play back the tape. This is normal.

**If you wish to avoid recording unwanted material**

- ③ Push PAUSE/STILL Button to stop the tape temporarily. Push again to resume recording.



● Always use PAUSE/STILL Button to obtain proper recording continuity, but if the pause mode continues for more than 5 minutes, the Recorder will stop automatically in order to protect the tape and the video heads. Do not leave it in pause for a long time.

**After recording**

- ④ Push STOP Button to stop recording.



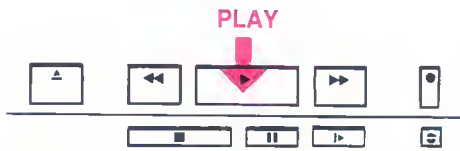
● To obtain proper continuity when taping from the stop mode, or when STOP Button has been pushed accidentally:

1. Rewind the tape for a short distance (about 5 digits on Tape Counter) by pushing REWIND Button.
2. Activate playback by pushing PLAY Button and view the picture on TV.
3. At the location where you wish to continue recording, push PAUSE/STILL Button.
4. Push RECORD Button together with PLAY Button; the unit will go into the standby mode.
5. Push PAUSE/STILL Button to start recording.



**First** Refer to BASIC OPERATION and EASY OPERATION GUIDE.

① Push PLAY Button.



- When the Tuner is turned OFF while the Recorder is in operation, the Recorder will turn OFF automatically. Do not shift the Tuner Power switch from ON to OFF repeatedly.

- Adjust Tracking Control on the unit or fine tune your TV if necessary.

**To rapidly locate a particular segment**

② Press SCAN Buttons. (about 9 times normal speed.)

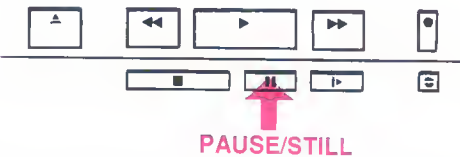


- During SCAN playback, the audio will be muted.

- Multi-motion playback can be activated during playback of tapes recorded in EP speed.

**To view a still-frame picture**

③ Push PAUSE/STILL Button.



- If noise bars appear in still-frame picture in EP speed, first set the deck in slow-motion and then adjust with Slow Tracking Control. Reset the deck in still-frame picture.

- Push again to release the tape from pause.

**To view a fine-slow picture**

④ Push SLOW Button. (about 1/6 normal speed.)



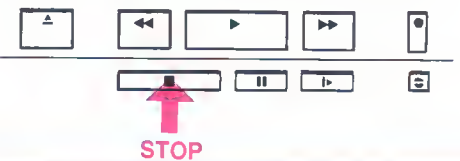
- Slow-motion speed can be changed with the Remote Control Unit.

- If the slow mode continues for more than 10 minutes, the Recorder will stop automatically in order to protect the tape and video heads.

- Push PLAY Button to release slow.

**After playback**

⑤ Push STOP Button to stop playback.



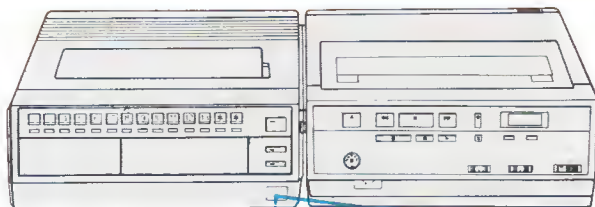
**Slow Tracking Control**

- In Slow-motion playback, this control can be used to fine tune the picture.



Slow Tracking Control

# WIRELESS REMOTE CONTROL(Supplied with 1CVT615) PT



**Wireless Remote Transmitter Operational Indicator**

**Power Button**

**Record Button (Two Button Entry)**

**Rewind Button**

**Pause/Still Button**

— Press to stop the tape during Playback. A still-frame picture will be shown on an EP tape.

**Frame Advance Button**

— During viewing of an EP still-frame picture, press this button to advance the picture one frame at a time or hold it down for a Slow-motion picture.

**Remote Sensor**

**Channel Selector Buttons**

**VCR/TV Selector Button**

**Fast Forward Button**

**Stop Button**

**Play Button**

**Slow-Motion Buttons**

— First press the SLOW Button during EP playback to view a Slow-motion picture. Press the "UP" or "DOWN" Button to increase or decrease the speed of the Slow-motion picture.

**Scan Buttons**

— Press either the SCAN ◀◀ (Reverse) or ▶▶ (Forward) Button to view the playback picture at about 9 times in EP mode.

## NOTE:

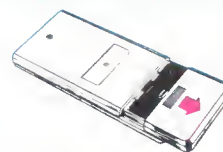
Be sure to check the Wireless Remote Switch of the Tuner is set to ON.

- The Wireless Remote Control is powered by two "AA" size batteries. The life of the batteries is about a year although this will depend on the number of times the unit is used. Replace or inspect the batteries once a year.

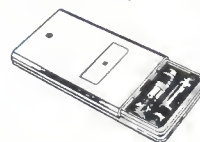
## BATTERY REPLACEMENT CAUTION

- Load the new batteries with their polarities (⊕ and ⊖) aligned properly.
- Do not heat, disassemble or shortcircuit the old batteries.
- If you do not intend to use the Remote Control for a long period of time, remove the batteries and store them in a cool, dry place.
- Remove spent batteries immediately and dispose of them.
- Do not mix old and new batteries. (Also never mix alkaline batteries with manganese batteries.)

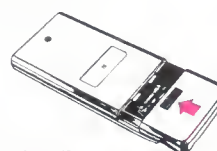
**Load the batteries as follows:**



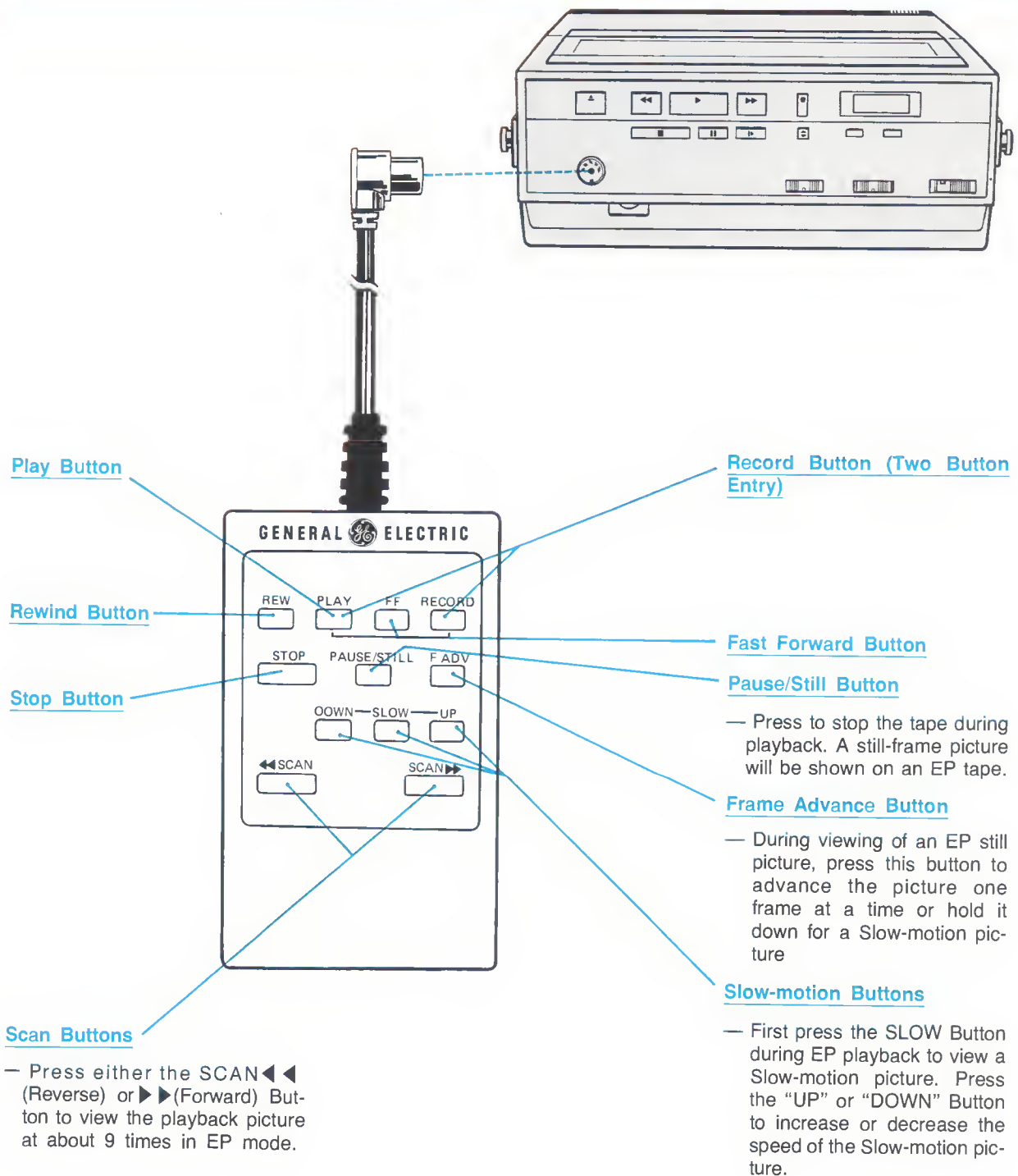
① Remove the Battery Compartment lid.



② Place two batteries in the Battery Compartment as indicated inside the Battery Compartment.

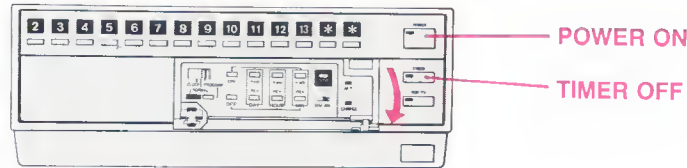


③ Replace the lid.



# CLOCK TIME ADJUSTMENT PT ET

- PT When the Power Switch of the Tuner is turned ON for the first time, the built-in digital clock display flashes "SUN AM 12:00".



For example set the clock for "SUN AM 10:15"

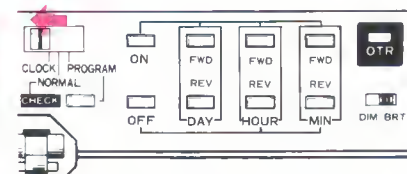
(PRESENT TIME)



- 1 Switch MODE SELECTOR to CLOCK.



CLOCK

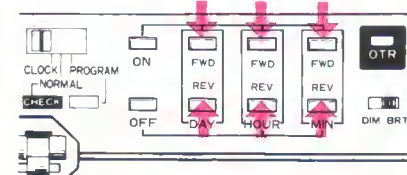


- 2 Push DAY, HOUR, MIN Buttons (FWD or REV) to set the clock.

- For example if the present time is 10:14 and 20 seconds AM on Sunday, first set the clock for "SUN AM 10:15".



DAY HOUR MIN

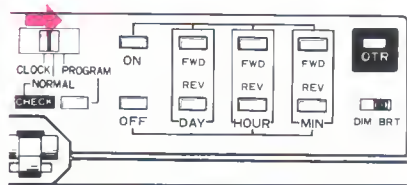


- 3 When the time becomes 10:15 and 00 seconds AM, Switch MODE SELECTOR to NORMAL.

- The clock will start normal clock operation on 00 seconds. (The seconds, however, are not displayed.)



NORMAL



- PT The back-up/circuit retains the present time memory for about 60 minutes in the event of a power failure.

## Dim/Bright Switch



Dim/Bright Switch

- The brightness of the clock display can be adjusted as desired by using the Dim/Bright Switch.

- ET 1CVT605 does not have DAY Buttons, and does not indicate a day.

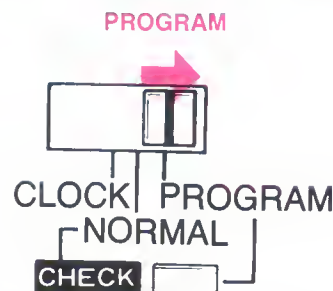


**(PT)** The timer permits unattended recording of up to 4 programs. It can be preset two weeks in advance to record your favorite TV programs. You can even automatically record every day programs that are broadcast in the same time slot over the full-length of cassette.

For timer recording the unit needs to know ① which PROGRAM NUMBER, ② what DAY to make a recording, ③ what TIME TO START and, ④ STOP recording, and ⑤ a CHANNEL to be recorded.

For example, the present time is MON.11:30 AM, you want to set the timer for timer recording as follows; ① program number 4, ② next Tuesday. ③ from 12:00 PM, ④ to 1:00 PM, ⑤ CHANNEL 6.

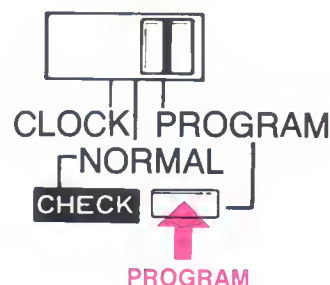
① Switch MODE SELECTOR to PROGRAM.



- The DAY, HOUR, and MIN display will turn off, and Program Indicators 1,2,3,4 will blink on and off.
- Previously set programs will light up without flashing.

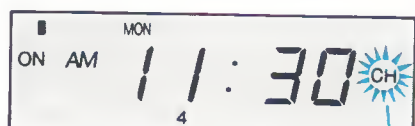
② Push PROGRAM Button.

(You can now select the program number to be preset.)



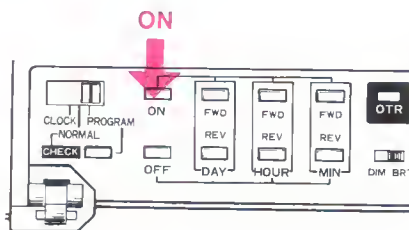
- Select the program indicator to be preset.
- Push the program button once to advance one program.
- "ON" Lamp will flash ON and OFF.

③ Push ON Button.



(The present time displayed)

"CH" Lamp

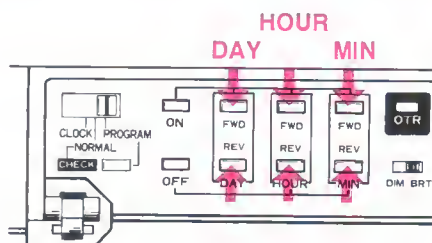


- The symbol "■" means the 1st week.
- You can select the desired channel at any time during "CH" Lamp flashing, see ⑥.

④ Press DAY, HOUR, MIN Buttons.(FWD or REV)

(Set up for the time and day you wish the recording to start.)

(Holding the buttons in changes the display rapidly.)



Every day recording

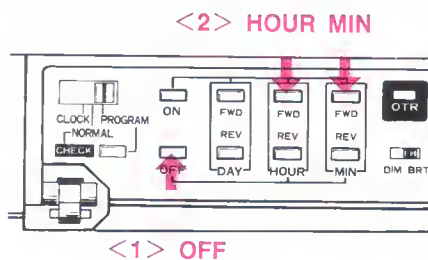


- If a day in the second week is selected the symbol "■" will light up.
- Be sure to check the AM, PM indications.
- If recording stop time is not set up, or the start time and stop time are same, this program will be cleared.
- For every day recording, continue to push DAY Button until all day indications light up.
- Every day recording will continue over the full-length of a cassette.

⑤ Push OFF Button, and press HOUR, MIN Buttons (FWD or REV).

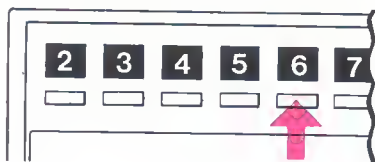
(Set for the time you wish the recording to stop.)

(Holding the button in changes the display rapidly.)



- If one program overlaps another the program indicator of the overlapped one will flash on and off. If overlapping should occur the program must be reset.

⑥ Push DESIRED CHANNEL Button.

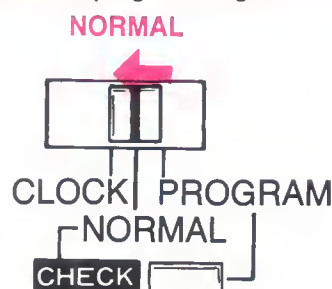


- The currently viewed channel will go off, and the desired preset channel will light up. In this case, the TV picture will also change.
- After selecting the channel, "CH" Lamp flashing turns off.

- Push PROGRAM Button to select the next program and repeat ②~⑥ for presetting the desired program.

**CAUTION:** Do not set the timer during a recording.

- ⑦ Return MODE SELECTOR to NORMAL when you finish programming.

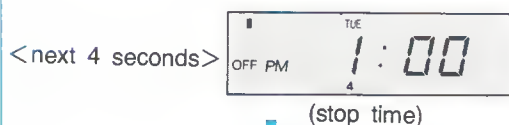
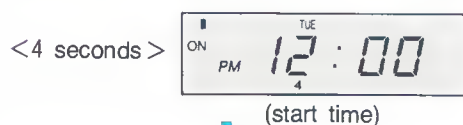


- Even when the Power Switch of the unit is turned OFF, the unit will retain the programmed start and stop times.
- The channel lamp is returned to the currently viewed channel automatically.

### To Check Program

**First** Check that MODE SELECTOR is set to NORMAL, and Power Switch Is ON.

- ① Push PROGRAM Button and select the Program Number that you wish to check.



- During program checking, the preset channel light up, and the currently viewed channel turns off. But, after checking, the channel lamp is returned to the currently viewed channel automatically.
- When one program overlaps another program, the program number of the overlapped portion will flash on and off.
- If PROGRAM Button is pushed again within 6 seconds, the next program can be checked.
- The program can't be checked during a recording.

### To Clear a Program

**First** Check that Power Switch is ON, Timer Rec Switch is OFF.

- ① Switch MODE SELECTOR to PROGRAM.
- ② Push PROGRAM Button and select the Program Number that you wish to clear.
- ③ Push ON Button.
  - If you wish to clear a program while setting recording start time, push ON and OFF Buttons.
- ④ Return MODE SELECTOR to NORMAL after clearing.

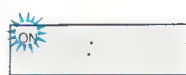
### NOTE:

When the Timer Rec Switch is ON or during One Touch Recording, programs cannot be set.

## ET For use 1CVT605

The Electronic Tuner permits unattended recording of 1 program a day. You can even automatically record an every day program that is broadcast in the same time slot over the full-length of the cassette.

- ① Switch MODE SELECTOR to PRESET.



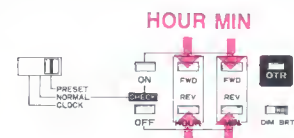
● "ON" Lamp will flash on and off.

- ② Push ON Button.

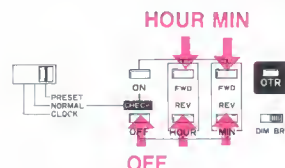


(The present time will be displayed.)

- ③ Press HOUR, MIN Buttons (FWD or REV).  
(Set up for the time you wish the recording to start.)



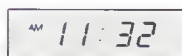
- ④ Push OFF Button, and press HOUR, MIN Button (FWD or REV).  
(Set up for the time you wish the recording to stop.)



- ⑤ Push DESIRED CHANNEL Button.

● Check the channel to be recorded before pressing the TIMER REC Switch ON.

- ⑥ Return MODE SELECTOR to NORMAL when you finish programming.



(present time)



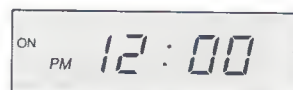
- In the event of a power failure for more than 1 second the clock and program must be reset.
- Even when the Power Switch of the unit is turned OFF, the unit retains the programmed start and stop times.

### To Check Program

**First** Check that MODE SELECTOR is set to NORMAL and Power Switch is ON.

- ① Push ON Button.

< 2 seconds >



(start time)

< next 2 seconds >



(stop time)



(present time)

- The Program cannot be checked during a recording.

### To Clear a Program

**First** Check that Power Switch is ON and the Timer Rec Switch is OFF.

- ① Switch MODE SELECTOR to PRESET.

- ② Push ON Button.

- ③ Return MODE SELECTOR to NORMAL.

#### NOTE:

When the Timer Rec Switch is ON or during One Touch Recording, programs cannot be set.



**First** Refer to BASIC OPERATION and EASY OPERATION GUIDE.

- ① Select CHANNEL to be recorded and confirm the proper reception on TV.
- ② Turn TV OFF.
- ③ Set TIMER REC Switch ON.



Timer Rec Mark

Timer Indicator Lamp

\*As long as the Timer Recording is set up, the Timer Rec Mark and the Timer Indicator Lamp are lit.

ET 1CVT605 Timer Rec Mark is a different position, but operation is the same.

**NOTE:**

If TIMER REC Switch is pressed before programming is completed, TIMER REC Mark (□) will not be shown but TIMER Indicator Lamp will light.

- ④ After Timer Recording has been done, set TIMER REC Switch OFF.

- When TIMER REC Switch is ON, you cannot operate the unit manually.
- If the cassette's tab is missing, TIMER REC Mark will flash on and off and no recording will start.
- Your selected channel cannot be changed by mistake during recording.
- To stop the recording turn TIMER REC Switch OFF.

PT Plug the Tuner into a live AC outlet for two days (without power interruption) and the time required to charge completely the timer back-up circuit is then provided. After this period of time the Programmable Time will have a 60 minute back-up in case of power failure.

PT If the TIMER REC Switch is not switched to ON when the start time for a programmed recording comes up, the recording will not occur and the missed recording will be automatically reprogrammed to occur 2 weeks later.

PT **When Overlapping**

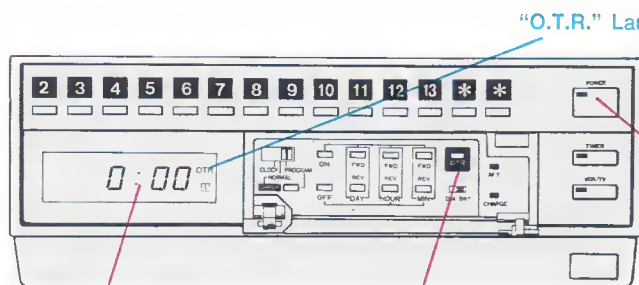
- If there is an overlap of recording times, the program with the earlier starting time will take priority.
- If there is an overlap of recording times and both recordings have been programmed to begin at the same time, the one with the lower program number will take priority.
- If the programmed starting time for a timer recording comes up while a One Touch Recording is in progress, the timer recording will not be performed.
- The missed recording will be automatically reprogrammed to occur 2 weeks later.

# ONE TOUCH RECORDING PT ET

One Touch Recording (O.T.R.) enables you to do impromptu recordings at any time. Just select the channel and push the O.T.R. Button for 30 minutes to 2 hours of recordings.

**First** Refer to **BASIC OPERATION** and **EASY OPERATION GUIDE**. (same as "To watch and record the same program" or "To watch one while recording another".)

① Select CHANNEL to be recorded and confirm proper reception to be recorded.



**"O.T.R." Lamp** ET 1CVT605's "O.T.R." Lamp and Timer Rec Mark are in a different position, but operations are the same.

**Power ON**

② Push ONE TOUCH RECORD Button.

- "O.T.R." Lamp and Timer Rec Mark are turned on.
- All functions will become inoperative.
- The Timer Display will change from the present time to the standby condition (shown as "0:00" on the display).

PT Be sure to select the channel first. (Channel can be also selected during "0:00".)

③ Push ONE TOUCH RECORD Button repeatedly to select the recording time:

O.T.R.Button	Timer Indication (O.T.R. Time)
1 push	0:00 (standby )
2 push	0:30
3 push	1:00
4 push	1:30
5 push	2:00
6 push (= 1 push)	0:00

- Each time the O.T.R. Button is pushed, the Timer Display will change as shown in the diagram on the left.

- The Timer Indication shows the recording time. During recording it will show the time remaining until "0:01". When the recording ends, the Timer Display will return to the present time.

- Be sure to select time Press Button within 8 seconds, otherwise the Timer Display will return to the present time, and "O.T.R." Lamp and Timer Rec Mark will turn off.

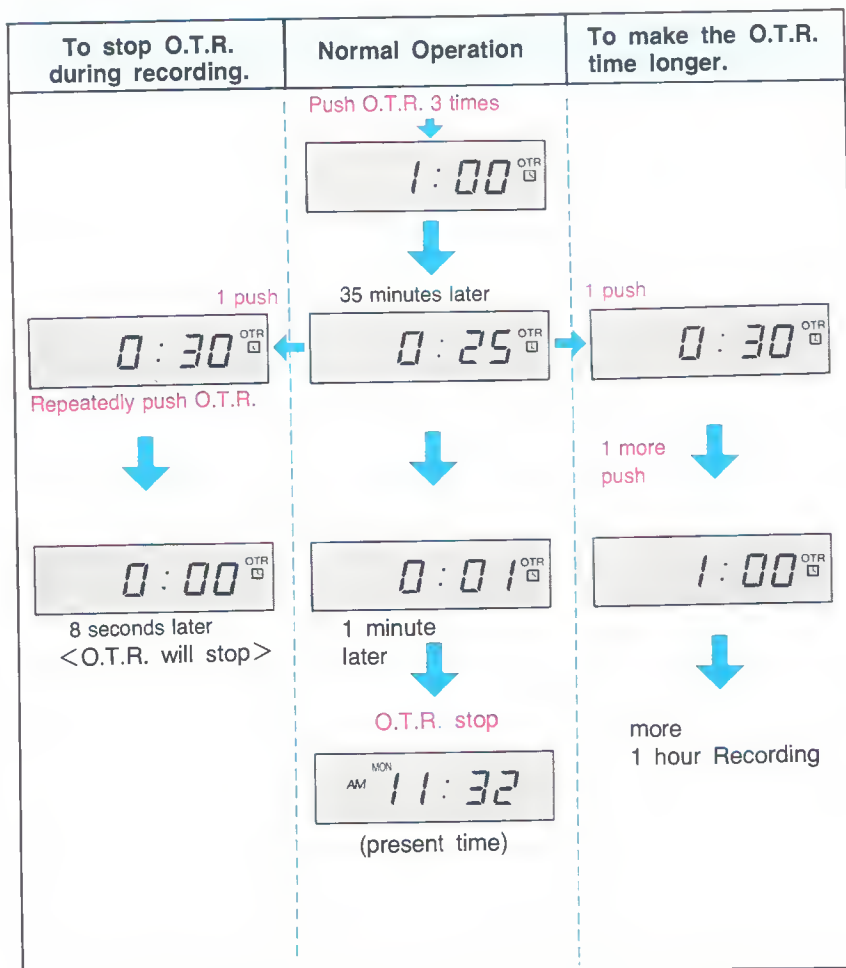
PT If the O.T.R Button is pushed while a Timer Recording is being set. One Touch Recording will begin recording on the last channel which was set. (Channel can also be select during "0:00" indication.)

- If you wish to stop the One Touch Recording, push the O.T.R. Button repeatedly until the Timer Display returns to "0:00".

④ Turn the TUNER and RECORDER OFF after the recording.

**NOTE:** The Remote Control feature will not function during One Touch Recording.

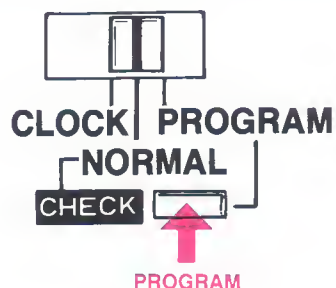
(PT) (ET) For Example



Caution for One Touch Recording during Timer Recording.

- If the preset time for a Timer Recording comes up during a One Touch Recording, the One Touch Recording will take priority.
- The recording time can be made longer by pushing the O.T.R. Button during a Timer Recording or a One Touch Recording.

(PT) If you wish to know the present time



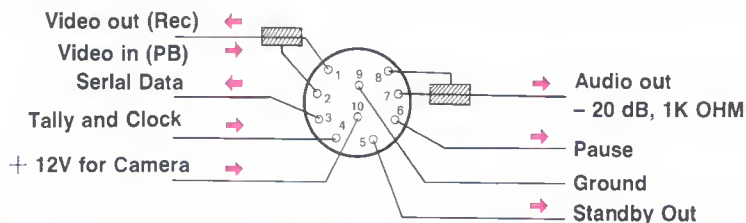
- During a One Touch Recording, push the PROGRAM Button. The present time will be shown on the Timer Display for 4 seconds.

(ET) In case of 1CVT605, switch the Mode Selector to NORMAL and push the ON Button.

# CAMERA RECORDING

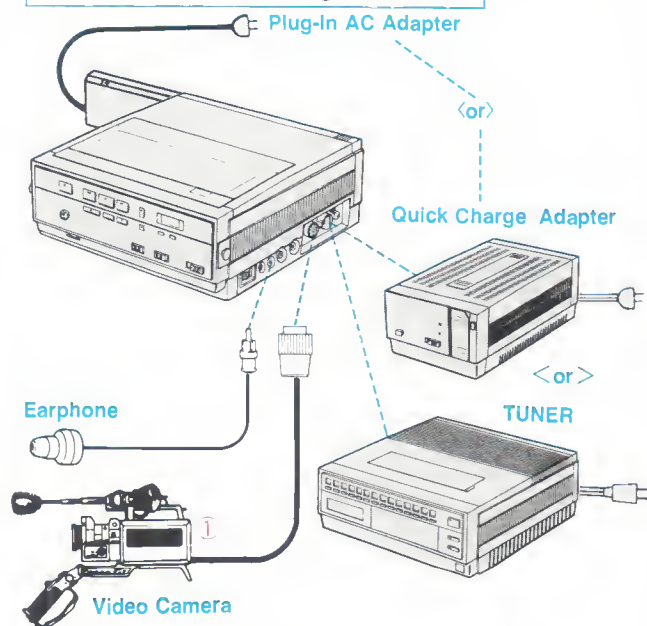
The Recorder may be used with an optional General Electric Video Camera, and can also work with most other Video Cameras with a 10-pin camera cable. If you use a video camera other than GE model 1CVC3030E or 1CVC30305E, verify that the camera has the same 10 pin connection plug as shown. See your technician or dealer for assistance.

## 10 Pin Camera Connector Diagram



**First** The Camera Remote Switch must be set to ON. And set Tape Speed Selector to SP, LP or EP.

## Indoor Camera Recording Connection



- When you make a camera recording with a Video Camera designed for this portable VCR, check to that VIDEO IN jack of the VCR is free, or the camera remote system will not function.
- If you want to review the tape you have recorded immediately, you can do so with electronic viewfinder of the camera.
- Do not use the Plug-In AC Adaptor simultaneously with Quick Charge Adapter or with the Tuner.  
Be sure to check whether the Plug-In AC Adaptor is plugged in or not.

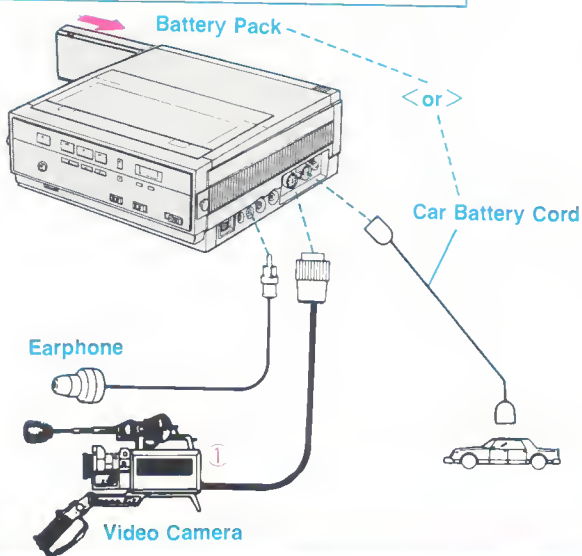
## Earphone

You can listen to the sound by connecting the Earphone to Earphone/Audio Output Connector on the Recorder.

## NOTE:

If the internal Battery Pack or Plug-In AC Adapter is used for camera recording, no picture will be monitored on your TV during recording.

## Outdoor Camera Recording Connection



- 1 Make any necessary adjustments on the camera. Refer to the Operating Instructions of the camera you are using or of the camera designed specially for this Recorder on how to handle the camera and how to start and stop camera recording.

- If you want to review the tape you have recorded immediately, you can do so with the electronic viewfinder of the camera.
- When using the Battery Pack, make sure the Power is OFF, and insert the Battery Pack. Be sure to check the Battery indicator before turning the Power ON. Refer to BATTERY CHARGING.



**Using Car Battery Cord (optional)**

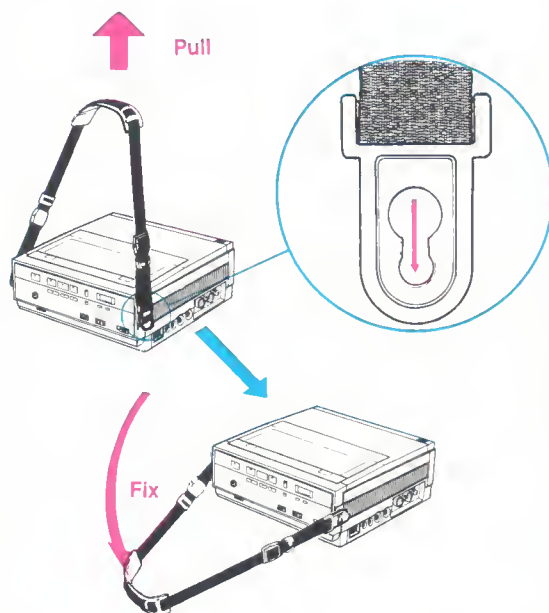
- ① Turn the Recorder OFF.
- ② Connect the 14P plug of this cord to the Recorder's Adaptor Connector.
- ③ Take the car lighter out of the cigarette lighter socket.
- ④ Start the car's engine and insert the car lighter plug of the cord into the socket.  
For fuse replacement, see the exact current rating (Amps).

- Be sure to start the car's engine before inserting the car lighter plug of this cord into the cigarette lighter socket; otherwise the car lighter plug fuse may burn out when you start the engine.
- The car's engine should be running while the unit is in operation.
- Disconnect the car lighter plug when the unit is not being used.

**Using with a Shoulder Strap**

Use Shoulder Strap across your body to carry the VCR deck.

How to fix the Shoulder Strap:

**Using with a Carrying Case (optional)**

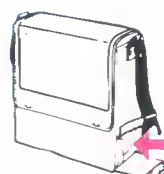
The Carrying Case is convenient for outdoor recording.



To insert the Recorder into the Carrying Case, open the front cover.



When the Recorder is to be transported, cover it as shown.



When changing a Battery Pack, open the cover on the right side, and plug in it as shown.

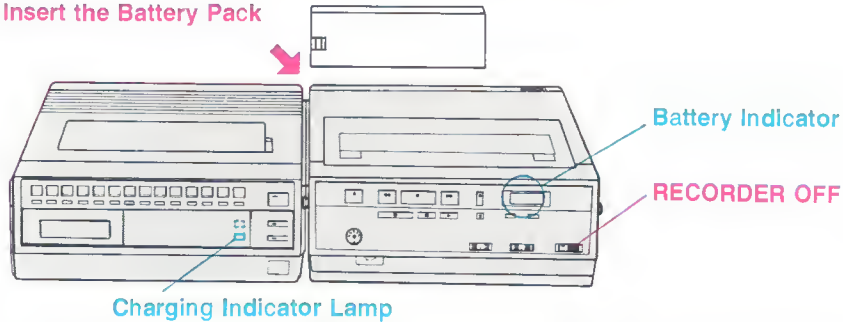
# BATTERY CHARGING

## Charging with Tuner (same with Quick Charge Adapter)

**First** RECORDER should be Kept OFF, during battery charging.

② Turn TUNER ON  
(charging start)

① Insert the Battery Pack



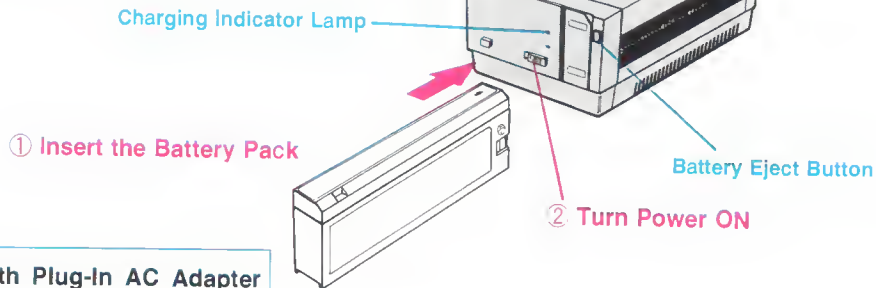
## High Speed Charging

Battery can be charged by ① Quick Charge Adapter ② Recorder and Tuner ③ Recorder and Quick Charge Adapter ④ Plug-In AC Adapter. Charging time is as follows.

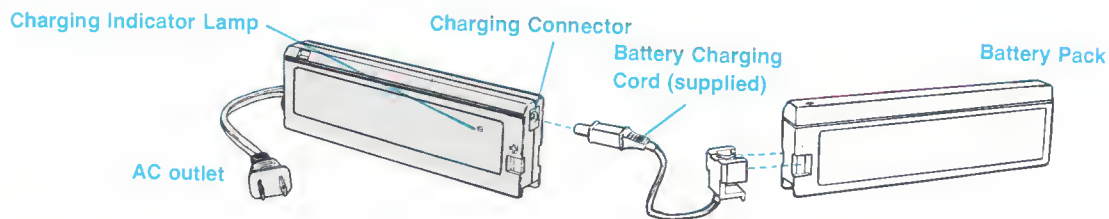
Charging unit	Charging time
Quick Charge Adapter	about 1.5 hour
Recorder+Tuner	within 3 hours
Recorder+Quick Charge Adapter	about 1.5 hour
Plug-In AC Adapter	about 6 hours

- Overcharging will shorten the Battery Pack's life. Do not continue charging more than necessary.
- The useful operation time of the Battery Pack will gradually decrease after repeated use and recharging. The Battery Pack is no longer serviceable if the operation time is too short even after a sufficient charge time.

## QCA Charging with Quick Charge Adapter (optional)



## PAC Charging with Plug-In AC Adapter



- The Charging Indicator Lamp will usually go off 3 or 4 hours, but continue charging for more 3 or 4 hours for the full charging.

## Battery Indicator



← When fully charged, the indicator in the Tape Counter is as shown.

E F

← During Battery Pack discharge, the indicator shows the condition.

E F

E F



← When Battery condition is too low, the indicator "b" flashes for 3 seconds and automatically turns the Power OFF.

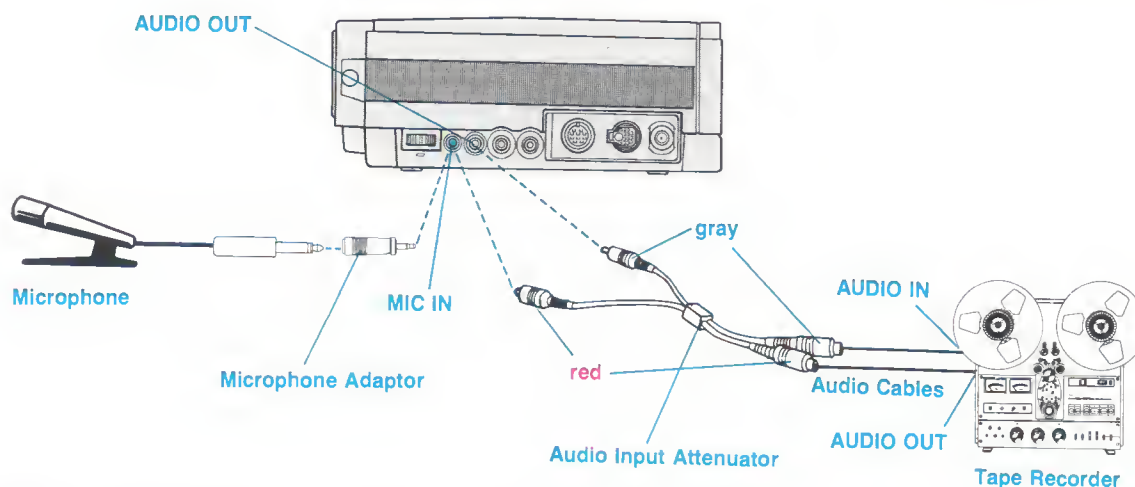
## A WORD ABOUT THE BATTERY PACK

- Store the Battery Pack in a cool, dry, and dark place.
- Do not drop it or subject it to strong impact shocks.
- Always charge the Battery Pack soon after use. If discharged for a long time its life may be shorter or recharging impossible.
- Be careful not to put the Battery Pack into a fire or to short-circuit it.
- Do not use any other chargers than specified.
- Do not use the Battery Pack for other appliances than specified.
- Do not use it below 0°C or above +40°C (32°F or 104°F).  
If the temperature exceeds this upper limits a safety device will automatically prevent operation of Battery.
- Should it be broken and the internal electrolyte containing sulfuric acid be spilled over skin or cloth, be sure to wash in water immediately or neutralize with ammonium water or sodium bicarbonate and call your doctor.
- Do not use an insufficiently charged or worn out Battery Pack.

# AUDIO DUBBING

Your own soundtrack may be substituted onto a previously recorded tape by using either a Microphone, Tape Recorder, or your own component audio system.

Note that the original soundtrack will be completely erased during audio dubbing.

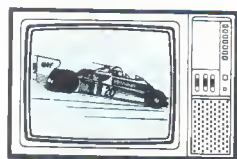


**First** Turn RECORDER and TUNER ON, and set VCR/TV Selector on the Tuner to VCR.



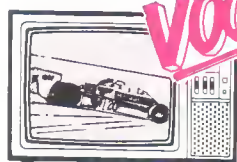
① Push PLAY Button.

<PLAYBACK start>



② Push PAUSE/STILL Button.

<STILL>



③ Push AUDIO DUB Button together with PLAY Button.

④ Push PAUSE/STILL Button once again to release PAUSE and start Audio Dubbing.

<AUDIO DUBBING start>



⑤ Push STOP Button to stop Audio Dubbing.

## Audio Input Attenuator

When something other than a Microphone (optional), such as a Tape Recorder, is used for audio dubbing and recording, use the Audio Input Attenuator for matching of the audio input level and for adjustment of plugs.

The phono-pin plug (gray) must be connected to the Recorder Audio Out jack to prevent hum.

## Microphone Adapter

If an external Microphone (M6 jack) is connected to the Microphone Input Jack, use the Microphone Adapter.

With a Microphone connected, only the Microphone sound will be recorded. If the Microphone has a M3 jack, the adapter is not needed.

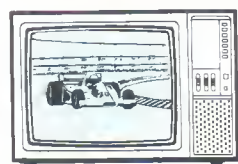
- When an audio dub is made the previous audio track is erased.
- When a Microphone is used for dubbing do not get it near the speaker of your TV while the dub is being made. A howling noise (feedback) may occur.
- If the cassette's tab is missing, no audio dubbing can be made.



Your desired picture may be substituted onto a previously recorded tape at any segment by connecting a Video Camera.

Note that original sound track will not be changed.

**First** Connect a Video Camera to Camera IN of the Recorder. (Refer to CAMERA RECORDING). Turn RECORDER ON, set VCR/TV Selector to VCR (Indicator light on) and Camera Remote Switch to OFF.

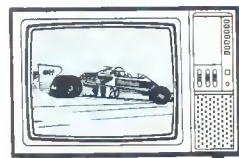


① Push PLAY Button.

<PLAYBACK start>



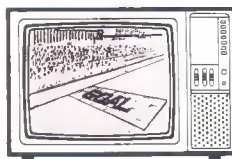
At the segment to be inserted



② Push PAUSE/STILL Button.

<STILL>

③ Push REC Button together with AUDIO DUB Button.



<INSERT start>

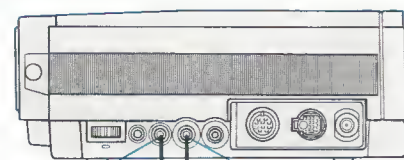
④ Push PAUSE/STILL Button to release pause and start inserting.

- Make sure that the camera is kept recording while inserting.
- Ensure that Erasure Prevention Tab is in place on the cassette.

- To stop inserting, push PAUSE/STILL or STOP Button. But, if you push PAUSE/STILL Button again, the inserting does not start again.

## RE-RECORDING

Machine playing the tape to be dubbed



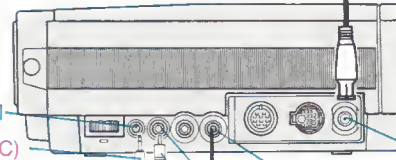
AUDIO OUT

VIDEO OUT

TV set  
(Used for monitoring)

CH3 or 4

Recording machine



MIC IN

red (MIC)

Audio Input Attenuator

Video Cable

Audio Cable

red (LINE IN)

VIDEO IN

AUDIO OUT

gray (AUDIO OUT)

RF OUT

Do not connect in this application

It is becoming more popular for friends to exchange and/or copy some of their favorite home recordings. Dubbing tapes from one machine to the other is simple and can be done as follows. You are cautioned that copying and/or exchanging copyrighted television programming may be copyright infringement.

In order to re-record, turn both recorders ON and push the PLAY Button on the playing machine and start the recording machine recording. To monitor re-recording, turn your TV ON and turn to channel 3 or 4.

- Video Cable should be 75 ohm type (COAX) antenna cable for best results.
- Audio Cable can be ordinary audio shielded type.
- Ensure the Erasure Prevention Tab is in place on the cassette.

# BEFORE REQUESTING SERVICE

## SERVICE

Before you have your Video Cassette Recorder (VCR) serviced, always review the operating instructions and service section below. The problem may be caused by signal conditions, a fault in the TV set or the way the VCR is connected and used. If the trouble persists and is caused by the VCR, unplug the recorder and have it serviced. Your dealer or the nearest GE distributor listed on the accompanying safety pamphlet will advise you of service shops specializing in VCR service.

### TROUBLE

No power to the tuner...

No power to the recorder...

Operation buttons do not function...

TV programs can't be recorded...

Timer recording will not function...

There is no playback picture, or the playback picture is noisy or contains streaks...

If the top of your playback picture waves back and forth excessively...

During still-frame playback the picture indicates motion or blurred action...

During Slow-motion playback the picture indicates blurred action...

Video cassette can't be removed...

You can't view programs normally on TV...

Playback image is partially bad...

The playback image is completely bad...

Interference with playback picture.

### CORRECTION

- Check to see if the power plug is completely connected to an AC outlet.
- Make sure that the POWER Switch is ON, and that the TIMER REC Switch is OFF.
- Make sure the tuner and recorder are correctly connected.
- Check the Battery Indicator and the Dew Indicator.
- Check the Battery Indicator and the Dew Indicator.
- Make sure the Camera Remote Switch is OFF.
- Check connections of the unit, external antenna and TV
- Make sure that the receiving channel of the tuner is properly tuned.
- Make sure recording start/stop time are set correctly.
- Select the channel on TV that corresponds to the selected channel (either 3 or 4) on recorder RF Converter.
- Set VCR/TV Selector to "VCR"
- Make sure the VHF/UHF tuning controls of the tuner were properly adjusted before recording a broadcast, and that TV was set at channel 3 or 4.
- Tapes recorded at SP and LP speeds cannot be played in multi-motion playback. The entire picture will be distorted.
- Locate the horizontal hold control on your TV. Turn it slowly to correct the wavy picture.
- Portions of the still-frame picture where the normal speed motion was particularly rapid may produce this effect. This is not a problem.
- Adjust the Slow-tracking control.
- Check the POWER SWITCH to see if the recorder is ON.
- Turn the tuner off. (The "TV" mode is automatically selected on VCR/TV Selector.)
- Adjust the TRACKING control.
- The video heads may need to be cleaned or replaced. Contact your dealer.
- Move VCR as far from TV as cables allow.

### USE WITH VIR FEATURE

This Video Cassette Recorder does not play back the special VIR signal used by some General Electric and other TV models. Owners of these sets should turn the TV set's VIR switch off and adjust the color and tint controls for best picture when playing recorded tapes.

<b>Power Source</b>	12VDC
<b>Power Consumption</b>	Playback 7 watts
<b>Weight</b>	6.7 lbs (3.1 kg), without battery
<b>Dimensions</b>	9-3/8"(W) × 3-5/8"(H) × 9-9/16"(D) 238(W) × 92.5(H) × 242 (D)
<b>Video Recording System</b>	2 rotary heads, helical scanning system FM azimuth recording Erase: 1full track erase, 1 audio track erase for audio dubbing
<b>Video Horizontal Resolution</b>	Monochrome/Color more than 230 lines
<b>Input Level</b>	Video: VIDEO IN jack (Phono) 1.0Vp-p 75 ohm unbalanced Audio: MIC IN jack -70 dB. 600 ohm unbalanced
<b>Output Level</b>	Video: VIDEO OUT jack (Phono) 1.0Vp-p 75 ohm unbalanced Audio: AUDIO OUT jack (Phono) -6 dB. 600 ohm unbalanced
<b>Audio Frequency Response</b>	SP. 100 Hz ~ 8kHz LP: 100Hz ~ 6kHz EP: 150 Hz ~ 5kHz (10dB down)
<b>Signal-to-Noise Ratio</b>	Video: better than 40 dB (Rohde & Schwarz) noise meter Audio: SP better than 42dB. LP, EP: better than 40dB
<b>Jacks</b>	M3, 3.5mm M6, 6.4mm (1/4 inch)

**LIMITED WARRANTY  
GENERAL ELECTRIC VIDEO CASSETTE RECORDER**

1. If your General Electric Video Cassette Recorder (VCR) fails because of a manufacturing defect within ninety days from the date of original purchase, we will repair the VCR at no charge to you.
2. In addition, if a component part of your General Electric VCR fails because of a manufacturing defect within the fourth through twelfth month from the date of original purchase, we will exchange the part without charge. Service labor charges will be the owner's responsibility.

Parts may be new or rebuilt at our option. Proof of original purchase date (sales receipt or other) must be presented when requesting repairs or component parts.

To obtain repairs under this warranty, the owner must provide transportation of the VCR to and from a General Electric Authorized VCR service shop (see listing of service shops packed with this VCR or consult your dealer).

**EXCLUSIONS**

This warranty is for products purchased and retained for normal home use within the fifty states of the U.S.A. and Washington, D.C. regardless of whether or not you move. Charges for the installation and hook-up of this VCR, costumer education and demonstration calls, or installation or repair of antenna systems are not covered by this warranty. Of course, it does not cover VCR's which have been modified, damaged or misused. **In no event shall the General Electric Company be liable for incidental or consequential damages.**

Some states do not allow the exclusion of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

This warranty is provided by General Electric Company, Television Division, Portsmouth, Virginia 23705.

GENERAL ELECTRIC COMPANY  
TELEVISION DIVISION  
PORTSMOUTH, VIRGINIA 23705

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